

The Home HANDYMAN

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SA'S
ORIGINAL
DIY
MAGAZINE

Ponds & water features

How to choose the right feature

Select the correct pump and filter

Keep your feature clean



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EGG RACK**



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FOLDAWAY
STEP STOOL**

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where to look and
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Base size (mm) 340 x 210
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Gross weight 42kg

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Single phase



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MAR380AN**

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Gross weight 73kg

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Single phase



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MAR430FN**

Specifications:
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A Passion For Woodworking

Water is life

By the time you read this I will have celebrated my first year at *The Home Handyman* and we will be more than a quarter of the way through the year! I can't believe how the time has flown – I have worked hard, learnt a lot and enjoyed every moment.

The theme for this issue is water, a big concern in current times. As I'm sure you are aware it is said that the next World War will be fought over water and not political ideologies. The 2014/15 season was the driest in over a decade in many places. Many of the poorest communities suffered loss of income and death of livestock during the past year.

Water supports life, but more than that – it is a comfort and makes life more enjoyable. Imagine skipping that shower to get you going in the morning or your soothing bath in the evening. I can't imagine my life without fishing in our fresh water dams, going boating, and the ebb and flow of our rivers. We all have to do our part in conserving this precious natural resource and this issue offers some tips on how to do so without altering your lifestyle.

Just because water is scarce doesn't mean we can't celebrate and enjoy it. A water feature makes for a great addition to any garden or entrance hall. The water feature you choose and the accessories you add will affect the effect you create. In the main feature we look at water feature options and where they work best, as well as pumps and spouts that save energy and water.

We didn't forget to include some woodworking projects: Clifford and Andries show you how to make an egg rack, and Candida and Aarifah make step stools for their dads at the Vermont Sales training centre. Also, a reader of the magazine shares his joy in making dolls' houses and Sue Mey shares her love of scroll sawing.

I hope you enjoy the read and that it makes your life more pleasant while equipping you with the knowledge to save water.

Gareth Greathead, Editor



The Home HANDYMAN

www.homehandyman.co.za

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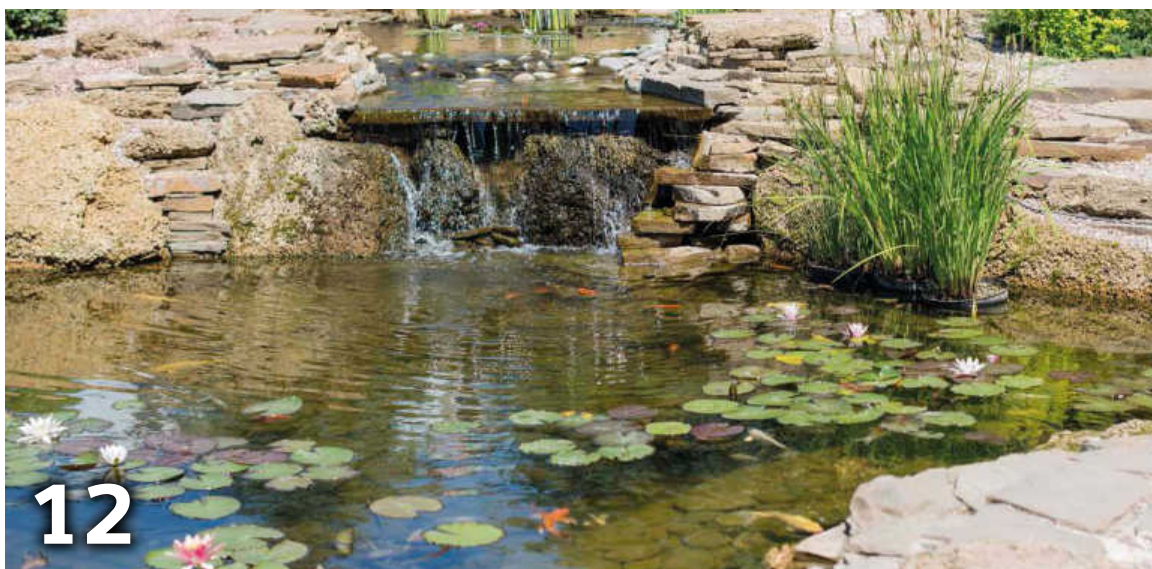
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Generic power tool accessories



Blacksmith offers a range of generic accessories for big brands. This includes a variety of cutting and grinding wheels for wood, masonry, ceramic, concrete, metal and glass. Its segmented diamond cutting discs for grinders have diamond blades that are welded for greater durability and extended life. Diamond blades can cut up to 50% faster and last as much as 80% longer than abrasive cutting discs. Blacksmith products are available at Builders Warehouse and Makro.



For more information

Visit: www.forgedprecision.co.za
Tel: 086-127-4636



Sophisticated measuring tapes

Stanley recently introduced two measuring tapes to its FatMax line of tools. These auto-locking models are available in 5m and 8m tapes with customisable hook systems. This enables you to connect an oversized or magnetic hook for facilitating one-man operations.

Professional features such as 3.3m of standout on the 32mm blades and a manual mode to override the auto-locking mechanism complete the setup. The blades are coated in Mylar and feature BladeArmor coating for durability and long life. Available at most hardware outlets.



For more information

Visit: www.stanleytools.co.za
Tel: 011-472-0454

Riveter attachment for drills

The Rivedrill range of attachments connects to your cordless or electric drill and eases 'popping' of pop rivets. There are a number of models available catering for peeled, blind, structural rivets and nut inserts. The attachment weighs 400g and takes rivet sizes from 10-30mm. The six models available come with the various attachments and a full range of nozzle sizes is available.



For more information

Visit: www.vermontsales.co.za
Tel: 011-314-7711

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Aqualoc is formulated with the highest quality fillers, pigments and film control agents for maximum waterproofing and elasticity properties. It is water based and offers a simple method for many waterproofing and vapour-proofing applications.



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- Can be applied to damp substrates.



For more information

Visit: www.ashak.co.za
Tel: 086-112-7425

Crosscut, chop and mitre wood

The JET JSMS10L Mitre saw is ideal for crosscutting both hard and soft wood up to 90mm thick and up to 305mm wide. With a base that can swivel and a head that can tilt up to 45° this makes it the ideal saw for decking, flooring contractors, roofers, picture framers and more. When fitted with the extension arms and end stops cutting repetitive lengths becomes a breeze. The machine is equipped with a laser light that shows the exact point of cut and the strong 1500W (230V) motor will cut mitres and compound angles with pinpoint accuracy.



For more information

Visit: www.strandhardware.co.za
Tel: 041-585-6996



Handy wood lathe

The Toni Wood Lathe TWL 100 is a stationary benchtop lathe ideal for spindle and bowl turning. It is a perfect match for start-up workshops or the DIY enthusiast. The highly adjustable variable speed allows the user to work on small as well as large workpieces and a variety of woods.

Specifications and special features

- 400W motor.
- Variable speed: 810-2480rpm.
- Maximum cutting length: 1 000mm.
- Turning capacity: 350mm.
- Dimensions: 1 490 x 450 x 140,5mm
- Weight: 25kg net.



For more information

Visit: www.newcopowertools.co.za
Tel: 011-315-1504

Versatile scroll saw

The Martlet SSA16L 16" Scroll Saw is supplied with a high-speed flexible shaft, adding another dimension to scroll saws. Now you can make jigsaw puzzles, template cut-outs and detailed pieces and complete the finishing work of polishing, sanding and drilling by fitting a bit attachment of your choice to the flexible shaft head.



Specifications and special features

- 90W single phase 220V motor.
- Maximum working height of 50mm and depth of 400mm.
- Diagonal adjustment range 0-45°.
- Blade length: 133mm.
- Variable speed: 550-1 650 s/min.
- Flexible work light.



For more information

Visit: www.makita.co.za
Tel: 011-878-2600

The 3mm bit attachments are not included with this model but various brands are readily available for purchase at leading retail outlets.

Value-for-money levelling tool

The Skil Spider Multi-surface Laser is a handy laser levelling tool ideal for hanging picture frames or decorating the home. Its two functions include line projection and point projection. The Spider also has two bubble levels and a backlight for easy adjustment.

The tool can be attached to almost any surface, at any angle, when using one of the seven attachments. Attachments include the laser base screw, laser base suction cup, laser base pin, laser base magnet, laser base clamp, laser base pivot and a belt clip. Available at all major hardware outlets.



For more information

Visit: www.skil.co.za
Tel: 011-651-9600



Zululand Woodturners Club



Dolf Joubert's model car



Dolf Joubert's Land Rover

The Zululand Woodturners Club covers the KwaZulu-Natal area, with members from Mtunzini in the south to Mtubatuba/St Lucia in the north. Most of our regular attendees are from the Richards Bay/Empanjeni area.

My wife, Jackie Hodsdon and I started the turning group in 2009 at the request of the Association of Woodturners of South Africa (AWSA) at the 2009 Congress. I am the AWSA representative for Zululand. The club focuses mostly on turning, but the topics vary depending on what the members want, covering the whole gamut of woodworking. One member, Dolf Joubert, is a superb model car-maker (see the photos above of the Land Rover he made in December as well as an earlier roadster).

With only 10 regulars, the Club doesn't have a committee so my wife, Jackie, also an avid turner, and I organise and run it as well as teach woodturning.

Richard and Jackie Hodsdon, by email

Winning letter

This month's winning letter comes from Larry Reuben who wins a Makita DHP453ZK 18V Cordless Impact Driver Drill



WIN!

A Makita DUB182Z 18V Cordless Blower

Share your opinion

Send us your views, ideas and opinions addressed to
The Home Handyman:

Email: editorial@homehandyman.co.za

Fax: 086 551 0749

By mail: PO Box 48, Cramerview, 2060

Letters may be edited for length and clarity

Attention woodworkers:

We would like to increase our interaction with you and be informed about events at your clubs. If you have anything to share, or suggestions on how to improve the magazine, please write to us. Invites to visit workshops would be appreciated and I hope we can work together on projects too. This would enable me to take pictures, ask questions and learn in the process. It will also help us to provide a larger amount of information valuable for woodworkers of all skill sets.

DIY photography

Today, everybody who owns a mobile phone is able to take photographs and even videos of anything and everything with limited skill. I began taking photographs at the age of 10 in 1955. Since then, photographic equipment has developed, giving everybody the opportunity to be a photographer. I think it would be helpful for readers if some handy mobile photography tips are provided in the magazine, especially for those who became photographers later in life.

Larry Reuben, Parklands

Ed responds: Hi Larry. At first I asked myself why DIY'ers, in particular, would want information on photography. After some thought I realised that it would enable people to share their projects more easily and in greater detail. On a related note, it may be helpful to provide some information on how to upload images as well. DIY'ers may also find this useful when taking something apart, as sometimes it helps to take pictures before you disassemble something to ensure you assemble it correctly later.

WINNING LETTER



Please note: Winners' prizes may take up to six weeks for delivery once the issue is on the shelf. The prize sponsor sends out the prizes.



MORE Efficient with
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DHP482ZJ - 18V Cordless Impact Driver Drill

- Successor to the popular DHP456
- Twin LED Job lights with pre-glow functions
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Capacity:

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- Wood : 38mm
- Masonry : 13mm

Impacts per minute (i/min):

Hi: 0-28,500

Lo: 0-9,000

No load speed (r/min):

Hi: 0-1,900

Lo: 0-600

Max. fastening torque:

Hard: 62Nm

Soft: 36Nm

Supplied with carry case



MORE Power • MORE Speed

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Generation



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WoodEX for Africa

WoodEX, organised by Acropolis Exhibitions, will take place from 9-11 June at Gallagher Convention Centre, Midrand. Stephan Jooste, CEO of Acropolis Exhibitions, says, "Local and international exhibitors continue to confirm their attendance and the increased interest from African countries is encouraging."



WoodEX features exhibitors showcasing timber, woodworking products and services. This includes woodworking machinery, fits and finishes, decking, flooring, structural timber, timber treatment, saw milling and logging, pulp and paper manufacturing and solid wood and veneer production.

"This event is the perfect platform for woodworking professionals to connect with specialised dealers, to catch up with the latest timber trends, to secure new business contacts and to compare deals," says Stephan.



For more information

Visit: www.woodexforafrica.com
Email: info@woodexforafrica.com
Tel: 021-856-4334

Lasher hands over cheque for anti-poaching

Earlier this year Lasher Tools handed over another cheque to South African National Parks (SANParks) and the Honorary Rangers (HRs) for the amount of R 330 000 generated through the sale of its Big Five tool range. The handover of this cheque pushes Lasher to a total contribution of R1.7 million.



Marketing officer Nicole Renny says, "The initiative has been running for the past three years and we have set a target of donating a total of R2 million by July 2016. Lasher Tools would like to express its gratitude to the many South Africans who specifically bought the Big Five Lasher Tools, which have contributed towards raising the funds for the fight against poaching. We ask that you continue to support our Big 5 initiative by purchasing any of the Big 5 Tools – shovels and spades, forks, picks, rakes and wheelbarrows."



For more information

Visit www.lasher.co.za

Roadside tyre inflation and repair

Holts has announced that its Tyreweld tyre repair aerosol will be in a pink can for the rest of 2016. The company has partnered with PinkDrive and aims to donate R1.5 million to PinkDrive via this campaign.



Business development director of Holts International Chris May says, "We will donate R5 to PinkDrive for every can of Tyreweld sold. We believe that Tyreweld is the perfect match for PinkDrive as our product is all about prevention and making sure that the individual can get to a safe place and not be stranded next to the road. The synergy lies in prevention."

Chris adds that as a company, Holts wishes to contribute towards keeping PinkDrive's mobile mammography units on the road, and is positive that the market will receive and respond positively to the campaign. "We are doing this in aid of PinkDrive to ensure that they can continue to touch the lives of many in South Africa," says Chris.

CEO of PinkDrive, Noelene Kotschan, says, "Partnerships such as these enable PinkDrive to continue delivering free service to the medically uninsured in South Africa. By purchasing Tyreweld you are giving yourself an insurance to get quickly and safely back on the road in minutes, without the need for tools, if you are unlucky enough to get a puncture."

The Pink Tyreweld product is available at stores such as Midas, AutoZone and other leading motor outlets countrywide.

New head office for Vermont Sales

The new Vermont Sales head office was designed and built to specification and is only 100m from the previous head office. The three-story, 5 500 square metre complex is 40% bigger and has three floors to accommodate its 44 brands.

Energy saving technologies were incorporated in the design and help make the building more energy efficient. As a start, all the windows are double glazed. Added to this is a 180 000 litre rainwater harvesting tank to water the gardens and flush toilets. Light harvesters were also installed to reduce the need for artificial lights during the day. Finally, photovoltaic solar panels generate free electricity daily and a backup generator guards against load shedding and power failures.

Founder and owner of Vermont Sales Roland Hunt says, "We designed the new building to suit the growing business, and



improvement of both external and internal systems was considered at conceptualisation. This will improve all of our services and save time when picking, packaging and delivering product to customers."

Head office: 192 Tsessebe Crescent, Corporate Park South, Old Pretoria Road, Randjespark, Midrand, South Africa.



Environmentally friendly wood treatment

animals, plants and the environment. It is used for structural and decorative timber products for both indoor and outdoor applications to preserve wood against termites, fungal decay and insect borers.

General manager of Arch Wood Protection Doug Sayce says, "With the growing trend for safer and more environmentally friendly products that reduce our carbon footprint, Arch Wood Protection has commissioned the first Tanalised E treatment plant in the Western Cape." The initiative is a joint business venture that is being spearheaded by outdoor timber specialists The Pole Yard and investor Elvin Roelofse, who boasts a 25-year career in the forestry industry.

Leeroy Deane from The Pole Yard says, "When Riversdale Sawmill, which included a CCA treatment plant, came up for sale, we knew that this was our opportunity. We purchased the mill and Arch Wood Protection converted the CCA plant to a Tanalised E treatment plant." Elvin says, "We are confident that our combined expertise will grow this business into a substantial local and export market for environmentally compliant wood treatment product options."

In an environment where eco-sensitive choices are considered as the responsible thing to do, people are looking for safer, more environmentally friendly wood treatment options. This is especially true for household and children's wooden products such as jungle gyms, planter boxes and garden furniture.

Tanalised E pressure treated wood contains a copper azole base formulation that does not leave any harmful residues in the soil or water and poses no risk for use around people,

Painted driveways



I stay in an estate with 21 homes that all have the same problem with their driveways. The paving is 10cm-thick solid concrete finished with a hexagon pattern. Everyone painted their paving with different types of paint, but all have the same problems, including discolouration, flaking, tyre marks and deterioration of the concrete if not painted regularly.

Hendrie Spies, by email

Technical service consultant at Prominent Paints, Herman Rabe replies:

As always, surface preparation is at the heart of any successful DIY paint job. Start with an acid wash solution of 'spirits of salts' (diluted 1:10 parts of water). After that, neutralise the surface with ProGold General Purpose Cleaner (diluted 1:10 with water) and rinse thoroughly with clean water. Before applying a coat of paint, make sure the surface being painted is sound, clean and dry.

Damp protective course (DPC) is seldom installed underneath paving. As such, a high moisture content in the substrate is possible and may cause premature paint failure. Being outdoors, the macro and micro climates that the coating will be exposed to must also be considered. This will help when selecting paint because not all paint will have the same abilities and suitability.

To remove tyre scuffs you can use ProGold General Purpose Cleaner (at a dilution ratio of 1:6) with hot water. Use a soft bristle broom to apply the soap to the surface and rinse with clean water after cleaning. Allow the surface to dry for at least 10 days before applying Prominent Paving Paint using an oval brush.



For more information

Visit: www.prominentpaints.co.za
Tel: 011-389-4746



Blocked water pipe

I enjoyed your article on fixing a blocked drain in the October 2015 issue, which made me focus on a 'blocking' matter of another nature, a blocked water pipe. The hot water pipe to our basin in the bathroom seems blocked because the water comes out in drips. Someone told me that it might be limescale build-up, and said I would have to break out the pipe – something I would like to avoid. Do you have any suggestions?

Louis Mulder, by email

National training manager at Cobra Watertech, Patrick Gordon replies:

It's difficult to determine the cause of the blockage, but I will offer some troubleshooting advice.

- If only one tap is affected, I doubt that the pipes are blocked with limescale.
- Are there flexible connectors running to the tap or mixers? If yes check these for blockages. This can be done if you disconnect the tube from the wall outlet and connect a hosepipe to the tube to see if the flow through the taps is still poor.
- If it is a separate tap, the blockage could be in the tap itself. Have you checked the aerator at the spout?
- The problem could be as small as a dislocated washer. Remove the head part from the tap and check for loose components.
- If flow is still poor, a systematic isolation is the only way to pinpoint the leak.

Winning query

This month's winning query comes from Hendrie Spies who wins a TC BS001 bicycle stand from Vermont



For more information

Visit: www.cobra.co.za
Tel: 011-951-5157 or 083-303-1437

Termite infestation



I used advice provided by *The Home Handyman* experts when restoring my Oregon pine floors in the past. Now, a few years down the line, I find myself faced with a termite infestation. I noticed the problem when my floor became loose and began to sag. When stripping a small section off the suspended floor, I noticed that termites had begun to eat through the cross beams. I need to make a plan before I find myself watching TV from a hole in my lounge. Is it possible to save the cross beams and flooring, and prevent the termites moving to other sections of the house?

Hamzah Pandor, by email

Technical director at Timberlife, Willie Conradie replies: We're sorry to hear about the problems you are having after lovingly restoring your floors only a few years back. Subterranean termites are ferocious little creatures and can completely destroy untreated timber structures in close proximity to soil.

I suggest you contact a reputable pest control company, preferably a member of The South African Pest Control Association, as soon as possible to do an inspection and apply a suitable treatment to eradicate the termite nest(s). The second step would be inspecting the structural integrity of the floor, especially the substructure. Should replacement be needed, ensure that it is replaced with treated timber of the correct hazard classification for the application.

For peace of mind, you can liberally apply a coat to all exposed timber components beneath the floor with a registered insecticidal product.



For more information

Visit: www.timberlife.co.za
Tel: 012-803-8595

Waterproofing a wall

My carport is enclosed with brick walls, which are plastered on the inside and painted with water-based paint. When it rains, one of the walls gets wet and the damp goes through the wall, causing the paint to flake. Is there a product I can use to paint over the water-based paint to make the wall waterproof on the inside without scraping all the paint from the wall to the bare plaster?

Andre van Rensburg, by email

Sales and marketing director at AShak, Cindy Engels replies: There are a few products that can be used, but there is no getting away from removing the flaking paint. A wire brush and some elbow grease will take off the loose paint. Hopefully the plaster has not deteriorated with exposure to moisture. We have a product called Damploc, which I think will be the most cost-effective and quickest way to solve the problem. Damploc will seal the wall and prevent further rising damp.



For more information

Visit: www.ashak.co.za
Tel: 011-822-2320

WIN!

A Triton cordless twin pack (TRI T12TP) from Vermont Sales

Ask our experts

Send us your DIY queries and you could win!

Send your query to:
The Home Handyman DIY Queries,
PO Box 48 Cramerview, 2060 or Fax: 086-551-0749
Email: editorial@homehandyman.co.za
Remember to include your physical address and telephone number during office hours.

Please note: Queries will be answered in the magazine. Winners' prizes may take up to six weeks for delivery and are sent by the prize sponsor.



Find out all you need to know
when choosing your dream
water feature

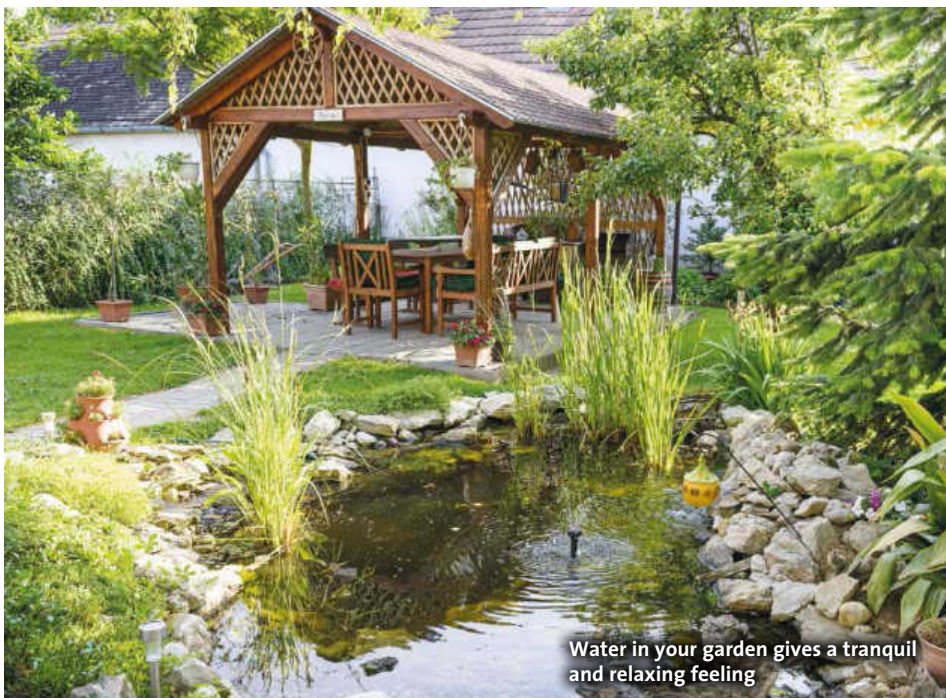
Install your own water feature

Nothing will give your garden as tranquil and relaxing a feel as a water feature. There is a wide variety of water features available, ranging from those you can buy and install to ones you can build yourself from scratch.

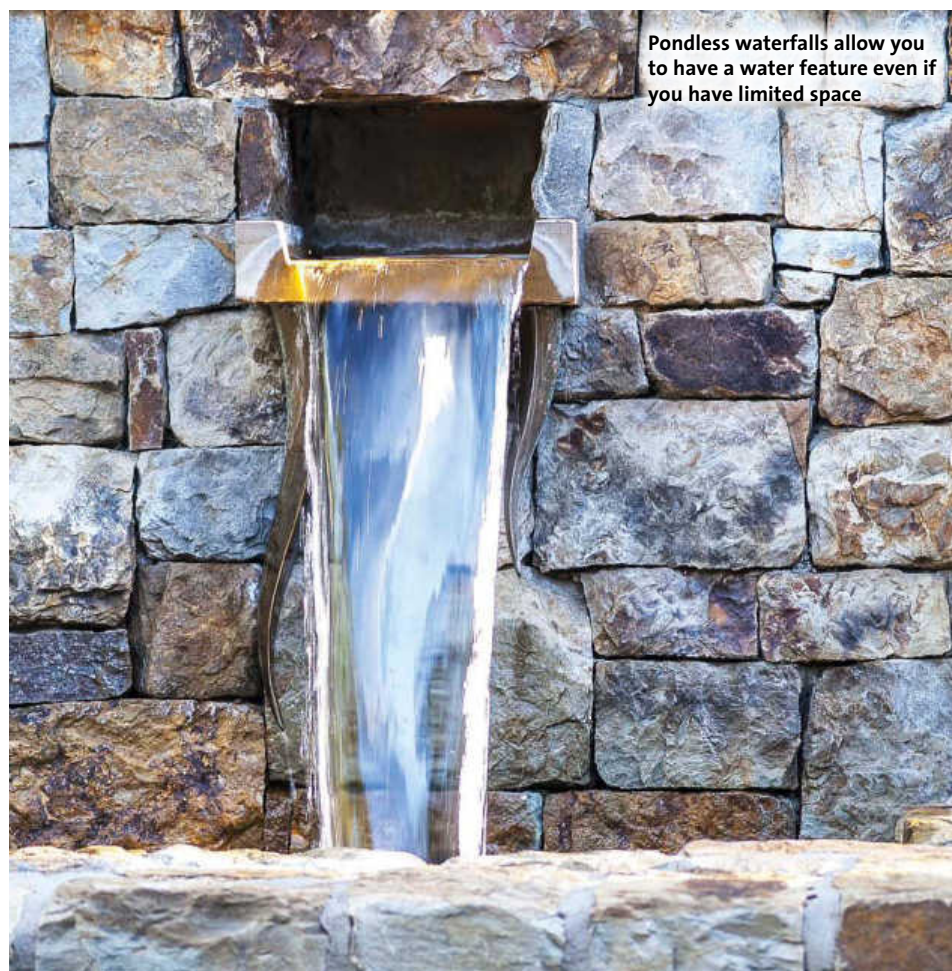
The first step is to choose which type of water feature you would like. Level of maintenance, price and location will all affect your decision.

Fountains

These can be beautiful while requiring limited maintenance. Their prices range from more affordable versions to the expensive variety. They can be used as a dominant stand-alone feature in a garden or in conjunction with a pond. They are the best option if you have limited space for your water feature. You can confine them to your patio or a small section of your garden.



Water in your garden gives a tranquil and relaxing feeling



Pondless waterfalls allow you to have a water feature even if you have limited space

Bird baths

Choose this option if you want to increase the amount of birds visiting your garden. These also range in price and more expensive options combine other water features like fountains.

Streams

These allow water to flow through your garden. With the help of landscaping you can make it appear as if a bubbling brook is flowing through your garden. They may also be combined with other water features.

Waterfalls

Waterfalls can be stand-alone features or part of a water garden or pond. If you are installing a water feature because of the tranquil sound the water makes, this is one of the best options. They also attract the most birds.

Pondless waterfalls are becoming popular because of their numerous advantages. They allow you to have a water feature even if you only have limited space. They are more cost-effective and require less maintenance due to the flowing water. You can spend a weekend building your own DIY waterfall.



A complete water ecosystem can include fountains, ponds, fish and water plants

Water garden or pond

This is a complete water ecosystem in your garden. It can include fountains, ponds, fish and water plants. It is popular with owners of koi fish. You can either buy a prebuilt version or use pond-liners to build your own. While it is possible to build your own pond, be sure that you are capable of meeting the complexity of your chosen design. Ponds can be designed to suit either small or large gardens.

The most essential requirement for a successful pond is maintaining balance in the ecosystem. While this is true for most water features, it is especially true for ponds:

- Ensure water flows so it is oxygenated for plants and fish.
- Use filters to help keep the ecosystem clean.
- Rocks and gravel act as natural filters by creating space for bacteria to thrive and by protecting pond-liners.
- Water plants and fish help keep the pond clean.



If there are koi fish in your pond, feed them less in winter and autumn

Location, location, location

Once you choose what size and type of water feature you want, you must decide where to put it. Many water features are self-contained and therefore do not need to be near a water source. They do, however, need to be near an electrical source. If it is impossible to get electricity from an existing source, considering getting an electrician to safely install another plug point.

It is easier to create the desired effect if the feature is placed among plants, but be careful not to choose a spot too near trees as this can increase the amount of time you spend cleaning it. It can also increase the chance of damage from tree roots later on. If you have young children, put your feature in an area out of their reach.

Solar power is a good option for smaller water features



Electrical versus solar powered water features

You can choose between electrical and solar powered features. Most are electrically powered because solar pumps do not generate the water flow required. While they should not add that much onto your electrical bill, the placement of your water feature can be limited by where the nearest electrical source is.

Solar power is a good option for smaller water features. The initial outlay can be quite high, but subsequent costs are low. These features are easy to set up as there is no need to consider electrical sources when placing them. However, they are not as strong as electrical powered ones and only come in smaller versions. Solar panels that can be moved to face the sun are a better option.

Pumps

The next step is to choose your pump. Water features rely on pumps to maintain a healthy ecosystem. Pumps move the water thereby aerating it, which is essential for the survival of fish and water plants. Flowing water spreads nutrients throughout the water and prevents water stagnation, which reduces mosquitoes and algae. Pumps also help create waterfall and fountain effects.

There are a number of different pumps and your choice depends on the type and size of your water feature.



▲ Magnetic drive pump

Submersible pumps

These are completely submerged in the deepest part of the pond. They are best for water features that have a very natural look as the pump is absorbed by the surroundings. These pumps can be placed directly into the pond or in a skimmer box.

External pumps

These are effective in moving large volumes of water. They also often outperform

submersible pumps in cost savings. Check if these pumps are self-priming. If they are not and electricity is momentarily lost, the motor can burn out. You can install a check valve to prevent this.

Magnetic drive

These pump water with the help of a magnetic field. They are not strong enough to lift water vertically. Ponds that do not get very dirty work best with these pumps.

Direct drive

These are the most powerful pumps. They work well for fountains and waterfalls as they achieve significant height. There are models that make use of oil and ones that use alternative lubrication if you have fish.

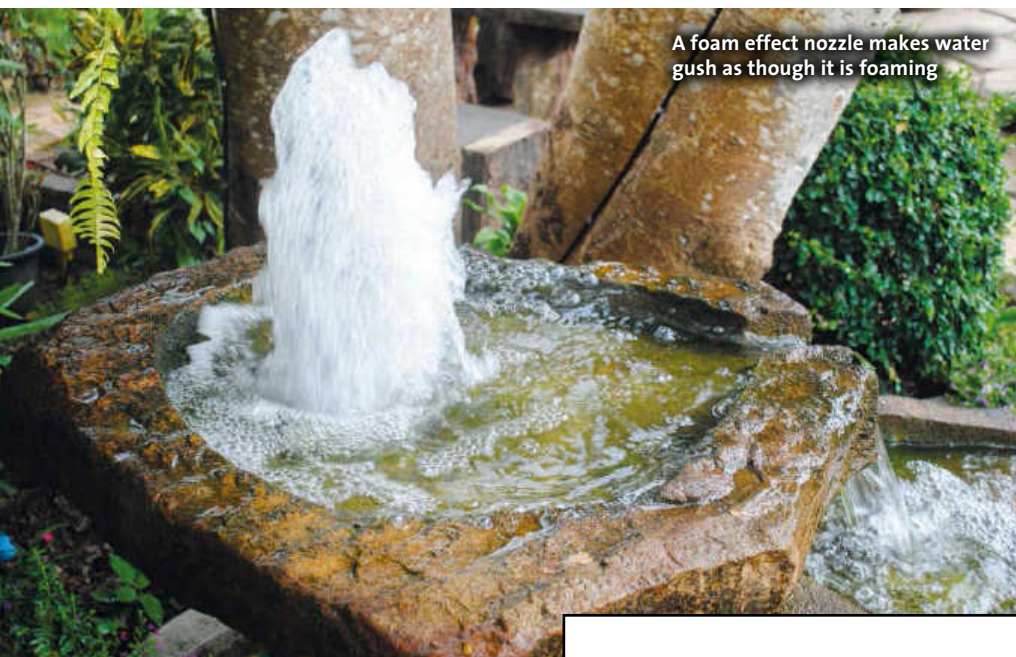
Other water feature pumps

- **Inline pump:** Draws water from a remote location. All external pumps have this feature.
- **Utility pump:** Screens out debris.
- **Solids pump:** Pulls small debris through without clogging. Not for use with fish and frogs.
- **Axial pump:** For high-flow, low-pressure ponds.
- **Solar pump:** Works well in sunny areas.
- **Heavy-duty pump:** Greater efficiency and longer operation, but more expensive.
- **Statutory pump:** Moves water through statues.

▼ Submersible pump



Types of pumps		
	Advantages	Disadvantages
Submersible pumps	<ul style="list-style-type: none"> • Easy to install • Quiet • Economical in small ponds • Can drain the water feature 	<ul style="list-style-type: none"> • Expensive in larger ponds • Oil in pumps can poison fish if the seal breaks • Clog easily • Difficult to maintain
External pumps	<ul style="list-style-type: none"> • Reliable • Affordable • Energy efficient • Long lasting • Easy to prepare • Less and easy maintenance 	<ul style="list-style-type: none"> • Loud • Difficult to install • Require self-priming to prevent burnout • Require dry location • Initially more expensive • Difficult to blend into environment
Magnetic drive	<ul style="list-style-type: none"> • Safe with fish as no oil is used • Highly efficient • Cost-effective • Minimal maintenance 	<ul style="list-style-type: none"> • Not easy to repair • Need cleaning occasionally
Direct drive	<ul style="list-style-type: none"> • Powerful • Alternative lubrication models can be used in water features with fish 	<ul style="list-style-type: none"> • Expensive • Not easy to repair



A foam effect nozzle makes water gush as though it is foaming

When deciding which of these to choose, the most important consideration is the size of the pond. A pump should be able to pump half the water feature's volume in an hour. If there are fountains and waterfalls, you also need to determine the maximum head height rating and lift. There are various tools online that can help you work out these measurements.

Water spouts

The kind of water spout you add to your fountain decides what pattern the water will make in waterfall and fountain features. There are a number of different spouts that can help you achieve the effect you are after. Examples include:

- **Laminar flow water jet:** Water flows in a smooth arc from the nozzle.
- **Foam effect nozzle:** Water gushes out of the nozzle, making it seem as if it is foaming.
- **Fountain nozzle:** Pushes the water out in various fountain shapes. Examples include rotating, single or multi-jet fountain nozzles.
- **Mushroom nozzle:** Pushes the water up and it arcs down in the shape of a mushroom.

Sprung a leak?

If you suspect your water feature is leaking:

- Find the leak by checking the perimeter for wet patches...
- ...or make sure no section has become clogged with debris and is leaking over the side.
- When you find the leak, pack extra dirt under the pond-liner to raise it above the water level.

Keeping your water feature clean

Filter

The first maintenance step is to place a skimmer in the water feature, which takes off the leaves, twigs and debris floating on the surface. Empty the basket every week or two and more often in autumn and winter. Never allow the debris to fill the basket of the skimmer completely. If there is too much debris, it can reduce water flow to the pump.

Under the skimmer is a filter mat, which catches debris that escaped the skimmer. This can be emptied less often because it will not catch as much debris. These devices stop large pieces of debris from making it to the pump.

Pump maintenance

While the maintenance requirements of pumps may differ, here are some general steps to take to keep your pump working at its optimum for as long as possible:

- Remove leaves blocking inlets at least once a week.
- Check water levels once a week.



A mushroom nozzle arcs the water in the shape of a mushroom



- Check for and remove sand from the water feature often. Sand gradually damages the impeller in the pump.
- Ensure electrical cords are not exposed to the perishing quality of direct sunlight.
- Never use chlorine as it will perish the parts. Rather use an algae controlling product.
- Avoid turning pumps on and off, especially submersible pumps; rather leave them to run constantly.
- If you notice an unusual reduction in water flow, check that no debris is stuck.

Seasonal maintenance

If there are fish in your water feature, feed them less in winter and autumn as their digestive systems slow down. Spend more time removing leaves that fall from trees. If the water turns brown from these leaves, add activated carbon to clear the water.

As it heads into spring, it might be time to give the water feature a full clean as bacteria colonies have not started forming yet. If there is a layer of dark water or crud at the bottom of the feature, it needs a full clean. Once you have emptied the water feature, rinse it down with the hosepipe. Do not scrub off all the algae as this helps restore the natural ecosystem when you refill.

Algae control is essential throughout the year. If you struggle to get rid of green water, use a UV filter to clear it. If, however, string algae is causing the problem, this can actually make it worse. The best way to beat algae is to balance the five most important elements of your water feature's ecosystem. These are the filter, pump, rocks and gravel, water plants and fish.

Water refills

The water level should be about 2cm from the top of the skimmer. As soon as you notice a drop in water level, replace it. If you have to replace more than 20% of the water feature's volume, you need to de-chlorinate the water. There is also the option to buy a water fill valve, which is connected to your water source, and can refill the pond as soon as it drops below a certain level. ✂



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Leak detection

How to identify a leak, where to begin looking and how it can be repaired

By Gareth Greathead

Your roof is leaking – you climb the roof but can't see, or even imagine, how the water is getting in. Everything looks okay, but there is water running down your walls in the living room. You make an assumption and the next time it rains your roof begins to drip in the same place or not far from there.

The markings or damage left inside after the rain provide a clue to what's happening on top. With this and some additional information, you may be able to pinpoint

potential issues better and apply a more suitable solution. Always keep in mind that water is fluid and moves across surfaces until it finds the nearest way down.

Treat water run marks, mould growth and flaky paint as a warning sign. An important concept to remember is that walls that display signs of either damp or mould growth must be treated and moisture levels stabilised before waterproofing or paint can be applied.

Penetrating damp refers to any water that enters a building and moves from a higher to a lower level. Toni Stella The Paint Fella and representative of the South African Paint Manufacturers Association (SAPMA) says, "Downward damp penetration presents itself as damp patches on walls, ceilings or floors. These

tend to grow or darken after periods of heavy or prolonged rain." Typical defects leading to penetrating damp are defective guttering or downpipes, faulty flashings or poor pointing.

Problem areas

Tiles

If water penetrates this barrier, it will get into your ceiling space. Newer roofs may have an extra line of defence in the form of thick plastic sheeting under the tiles. To fix the problem, you will have to secure the sheeting properly. When this sheet is tight, small amounts of water that make it through the tiles will be directed towards the roof ends, where loose water will pool on the sheets and find a way through.

Tiles may be cracked, moved or damaged; if someone is working on your roof, do an inspection before and after their installation has been completed. The tiles on the ridge of the roof may also work loose over the years or if they are not cemented in properly. Also check that there are no gaps in-between the tiles, and don't forget the roof ridge tiles or capping – these can become dislodged or weathered. Cracks in roof tiles will cause a similar problem; they may be tough to spot from the roof, but if you are able to get into your roof space, you may be able to see flickers of daylight penetrating through the cracks.

Flat roofs

These often present more waterproofing challenges than pitched roofs. To prevent problems, there should be no area on the roof where water can pool. Loose or buckled



Tip

If you can see the surface of your roof from the ground, get a pair of binoculars and look closely for problem areas.

Check your tiled roof for cracked tiles or gaps in-between the tiles



roofing sheets are a common problem on corrugated roofing. Water will get under loose lap joints or drip through missing screws, perished washers or loose roofing screw holes. Screws must be tightened and overcoated with a suitable waterproofing product. Small gaps in-between lap joints can be sealed with a membrane system.

Flashing

The strips that run along the base of your chimney stack or in a roof valley are called flashings. These galvanised steel channels direct water away from intersections and junctions and down and away from the roof. If flashings are buckled or cracked, water will penetrate and cause a leak. Parapets are walls that form a barrier at the edge of the roof and usually extend above the roofline. Inspect the flashing at the base of parapets to make sure it is correctly sealed. Loose or flaking paint on parapets may be caused by water sitting on top of the wall and penetrating the brickwork and mould may start to develop. These should be waterproofed.

Balconies

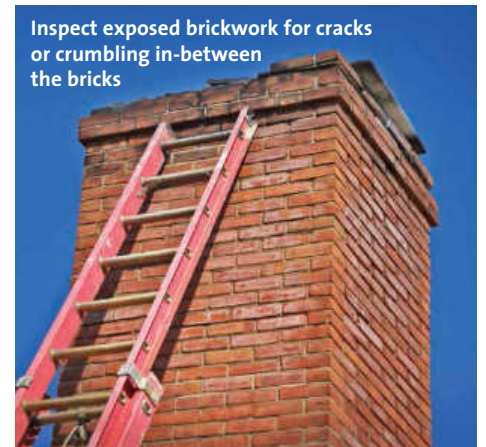
Check balconies for signs of efflorescence, cracks or mould. Also check the ceiling below the balcony for signs of water damage. Balconies should have adequate drainage points to allow for quick drainage during a rainstorm. Water that sits on the balcony in a puddle for too long will seep into the concrete and cause damp problems in the home. The balcony should also be slightly angled so that the flow of water is away from the house and not towards it.



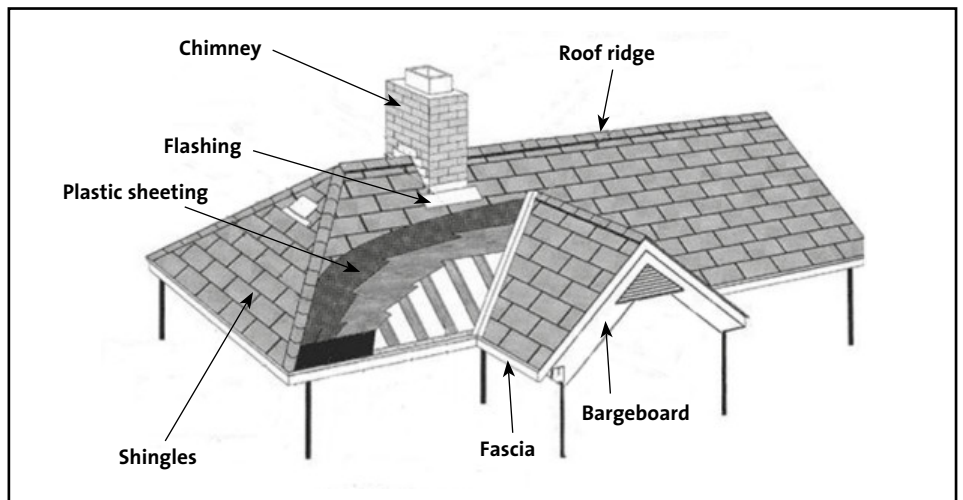
Check the ceiling below the balcony for signs of water damage

Exposed brickwork

If you have a face brick home or any structure with exposed brickwork, inspect for cracks or crumbling areas in-between the bricks. Also check the walls under windows; if the frames or windowsills are not correctly sealed, water can get in. Blocked or leaking gutters and downpipes may not be directing rainwater away from the house. This often results in localised damp where the affected area is in an isolated spot. Joints in windows and gutters can be sealed with a paintable acrylic or polyurethane flexible sealant. Brick sealer is a tough weatherproof seal to protect the wall in all types of weather.



Inspect exposed brickwork for cracks or crumbling in-between the bricks





Gutters should be checked, cleaned and flushed at least twice a year

Safety

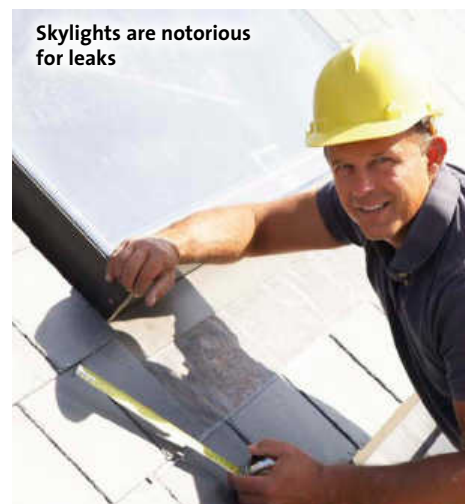
- When climbing the roof, place the stepladder on stable ground.
- Be careful where you lean the ladder against the roof as this can damage gutters and tiles.
- Make sure that the roof is secure enough to take your weight.
- Wear shoes with a good grip and stop regularly for breaks during the job.
- Never attempt any roof maintenance or repairs in wet weather or if rain is forecast.

Leak prevention

Bargeboards and fascias can take a beating from the weather and may end up cracked or split. Fascia boards should be properly secured to your roof. Peeling paint is a warning sign for water damage. Also, look for signs of mould and mildew. Remember to sand your fascias well and use enamel paint to coat them. Cracks can sometimes be repaired with a flexible sealant.

Gutters are there to direct water away from your roof and walls. If they are filled with debris and seldom cleaned out, water will spill over your eaves, causing them to rot. Gutters should be checked, cleaned and flushed at least twice a year.

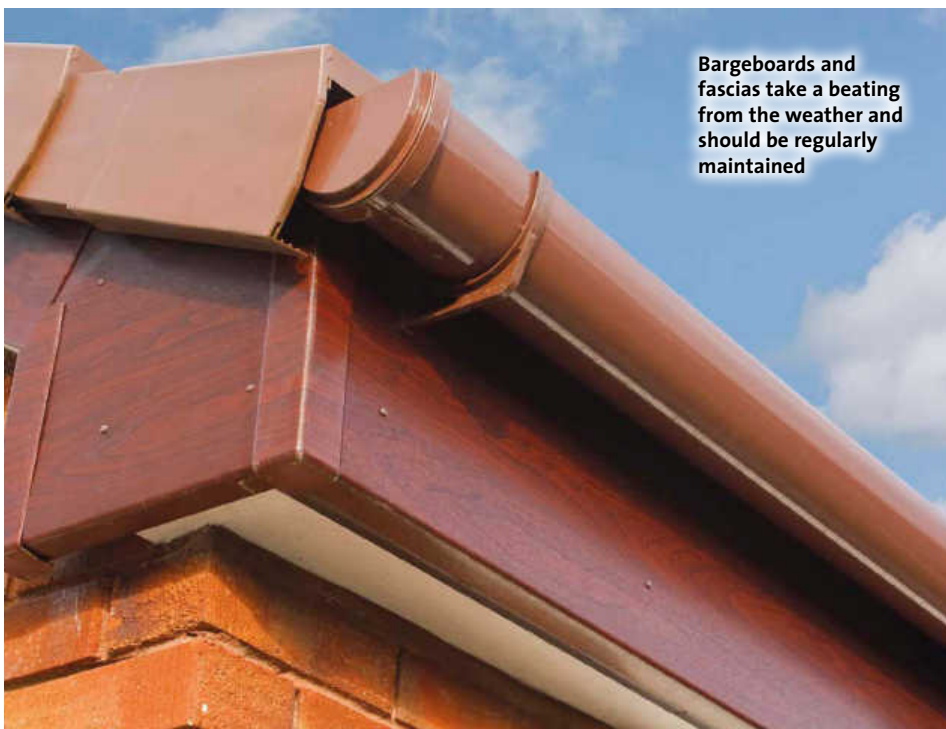
Skylights are notorious for leaks. First check to make sure that the problem isn't a result of condensation. If there is a significant amount of water coming in, it is unlikely to be condensation. Check weather seals around the skylight and replace them if necessary. Damaged flashing around the unit is a common culprit for leaks.




Skylights are notorious for leaks



Applying a waterproofing membrane to a flashing



Bargeboards and fascias take a beating from the weather and should be regularly maintained



Choose your waterproofing product carefully – this can make or break the job



Note

Walking on the roof can damage it. Try to walk near the screws rather than between them as this can cause them to pull loose. Consider placing a board on the roof to walk on.

Handy waterproofing products

Choose your product well. This can make or break the job. "When buying waterproofing products, many consumers look for the cheapest available products and turn to unknown brands unsuitable for their specific application. Statistics show that waterproofing costs only contribute to 1% of the building and painting of your house, yet 60% of the damages that can occur are due to using inferior or no waterproofing systems at all," says Toni. ✖

Products to consider

- Adhesive roof plaster.
- Latex compound.
- Membrane.
- Acrylic waterproofing compound.
- Rubberised bitumen.
- Polyurethane or silicone sealants

Ask for it by name

Need to seal a leaky roof? Sika Sealoflex® Professional is your solution.

Sealoflex® Professional is a ready-to-use, acrylic based, flexible waterproofing system that contains special fibre reinforcement.

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Surface prep: All surfaces must be clean, dry and properly cured.

Application:

Step 1: Apply suitable primer if required.

Step 2: Apply a generous base coat of Sealoflex® Professional evenly by brush, roller or soft broom and allow to dry for at least 4 hours or until touch dry.

Step 3: When touch dry, apply a top coat evenly and at right angles to the base coat. Additional coats may be applied as necessary.

Cleaning: Remove uncured Sealoflex® Professional with water. Cured material can only be removed mechanically.

Available in Grey, Terracotta, Charcoal and White. Please consult the most current product datasheet prior to any use.



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Parts of the country have intensified water restrictions and if we all make an effort to conserve water, together we can make a big impact

Be water wise at home

By Aarifah Nosarka

In a recent Department of Water and Sanitation (DWS) report, former minister of Water and Environmental Affairs Edna Molewa said that an astounding 37% of clean, drinkable water is lost through leaking infrastructure like dripping taps and wasteful use of water.

Another report issued by DWS stated that South Africa's dams are currently 54% full. According to a hydrologist at the DWS, Dr Dennis Dlamini, there is no way that the current rains will fill them to the brim.

How to save water indoors

- Did you know a leaking or dripping tap wastes between 30-60 litres of water a day, with a total of about 1 500 litres a month? Repair dripping taps by replacing the washers.
- Replace wasteful taps in your home by retrofitting aerators with low flow restrictors.
- There is no need to keep the water running while brushing your teeth. Fill a glass of water to use for rinsing.
- Insulate hot water pipes, which will result in hotter water coming out of the tap faster, lower water usage and lower electricity bills.
- Check your toilet for leaks. To do this, place a small amount of food colouring in your toilet tank without flushing. If the colour appears in the toilet bowl, it indicates a leak.
- Placing a 500ml plastic bottle in your cistern helps cut down water waste. Place some pebbles inside the bottle to weigh

it down, fill it with water and screw the lid on. Ensure that it is situated away from moving parts in the tank.

- Push up the handle after you have flushed.
- Avoid flushing the toilet unnecessarily. Dispose of tissues, insects and other such waste in the rubbish bin rather than the toilet.

Install a low flow showerhead to use less water



Tip

To find out whether your showerhead can be considered a water saving accessory, place a 2ℓ jug in the shower below the showerhead. Turn the shower on full power. If it fills up in less than 11 seconds, too much water is being expelled and it does not qualify as a water saving showerhead.



Fitting a modern dual flush toilet reduces water consumption



Don't leave the water running while brushing your teeth



- Fitting a dual flush toilet cistern reduces water use as it provides options. It has a button for solid waste (9ℓ) and one for liquid waste (4ℓ).
- Take shorter showers. You can save more than 3 000ℓ of water a month if you time your showers to take no longer than five minutes a day.
- Replace showerheads with low flow showerheads, which use up to 50% less water than a regular free flow showerhead.



Checking for leaks

Leaks outside the house may not seem as bad since they're not as visible, but they can be just as wasteful as leaks indoors. A way to check whether there is a leak on your property is to find your water meter and jot down your meter reading. Don't run water for about an hour or more on your property, then revisit the meter and check whether there is a change in reading. A change would indicate a leak on the property.

Saving water outdoors

- Sweep paving or outdoor areas using a broom instead of hosing them down.
- Water your plants early in the morning or at night as this reduces evaporation levels and leaves more water to soak into the soil.
- Water your lawn only when necessary. A good way to test if your lawn needs watering is to step on the grass. If it springs back up when you move, it doesn't need water. If it stays flat, the lawn is ready for watering.
- Spread a layer of organic mulch such as bark chips around plants to save water. Mulch slows down evaporation of moisture while discouraging weed growth. You can also press the mulch down around the drip line of each plant. This forms a slight depression in the soil, which minimises water run-off.



Spread a layer of mulch such as wood chips to save water



Water your plants early in the morning or later in the evening to reduce evaporation

- Burying some ice cubes in the soil of plants in containers will deliver constant water to the plants while they melt.
- Use drip irrigation for plants as this delivers water directly to where it's needed. Drip irrigation uses much less water than more traditional sprinkler irrigation systems.

- Set your sprinklers in the right place to ensure they water your lawn and plants rather than the house, sidewalk, street or driveway.
- Covering pools decreases the amount of evaporation. If the pool is leaking, you will notice a regular drop in the water level. Repairing it will counter the water level drop and save water as well as your electricity bill.

Water saving appliances and systems

Did you know that producing 1kW of energy consumes 1.32l of water, which is used to spin turbines in a coal-fired power station? Hence, producing energy uses water and providing fresh water uses energy because water and energy are inextricably linked.

- A washing machine is the appliance that consumes the highest volume of water in a household. A washing machine

with different cycles allows you to choose a more water and energy efficient cycle when only light cleaning is required. Ensure you wash a full load at a time.

- It is preferable to use a water and energy efficient dishwasher. Place a full load of dishes inside the appliance. Most new dishwashers do not require dishes to be rinsed before washing, which reduces the amount of electricity consumed.
- A water saving system that can be incorporated in a household is a red water diverter. When switching on a shower, most people leave the water

running until the water is warm. The red water diverter has been designed for households without a hot water system or geyser located close to taps. This copper device is a valve that diverts cool water (red water) before it reaches the tap. The cool water is stored in a rainwater or storage tank. It does not use electricity and requires some plumbing for installation. ✂

Source: www.waterwise.co.za



Tip

Newer household appliances use less water than older models.



Use a water and energy efficient dishwasher

Do it right... the first time

Woodwork



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Seal damp surfaces



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Reusing rainwater and grey water

Fight water scarcity by harvesting rainwater and reusing grey water on your property

By Aarifah Nosarka



The burgeoning local population and climate change have placed strain on water supply systems. This summer, many areas struggled due to drought, leading to the loss of livestock in the most vulnerable communities. Late rains in some areas provided some relief, but many areas still face water scarcity. For example, water levels in Clanwilliam Dam in the Western Cape are lower than they have been for years, but there is still hope that the coming winter rainy season may provide some relief in that area.

According to Rand Water, the majority of summer rainfall areas in South Africa, specifically Gauteng, have had 16 consecutive years of above average rainfall, barring the summer of 2014, and the last major drought was more than two decades ago. According to reports from Rand Water, this has created a false sense of security. With the threat of climate change threatening to increase water scarcity even further, it's important for us to understand our role in preserving water systems and conserving our precious water supplies.

As pressure on available water increases, more resourceful ways are required to supply water to users and this may increase the price paid per kilolitre of water. Rand Water reported that by 2033, at the latest, water demand in South Africa will exceed supply.



The vertical tank is the most commonly installed tank

This is why more and more people are capturing their own rainwater. Rainwater is naturally soft and relatively free from dissolved minerals and salts. It does not contain any chemical treatments and is a reliable resource for households. It can be harvested and stored in tanks and reservoirs above or below ground. At the same time construction of pits or trenches filled with water from downpipes during rains will redirect water to replenish the water table.

Types of rainwater tanks

Most rainwater tanks are made from plastic or polymer and are usually round in shape.

Tanks types include:

- **Vertical tank** – this is the most commonly installed tank and stands upright.
- **Horizontal tank** – can be used for domestic, industrial, commercial and agricultural use.
- **Low profile** – suitable for use in places with height limitations. It can be used for compact storage or water on small properties or used to transport water to desperate locations.
- **Underground tank** – usually used when inadequate space is available in urban environments. It can be placed under driveways, lawns, garden beds and low traffic areas.
- **Collapsible rainwater tank** – these tanks have either a 500l or 700l capacity, are easily installed and supplied with taps, overflow pipe and fittings. They can be installed in narrow spaces and gardens.



▲ Low profile tanks are used in places with height limitations



Collapsible rainwater tanks can be installed in narrow spaces

Benefits of rainwater harvesting

- Harvesting rainwater allows us to better utilise a free and naturally available resource.
- Reduces water bills.
- Systems for the collection of rainwater are based on simple reliable technology.
- Harvested rainwater can be used for several non-drinking functions, including flushing toilets, washing clothes, watering the garden and washing cars.
- Promotes self-sufficiency and helps conserve water.
- Provides an excellent back-up source of water in emergencies.
- The system can be easily retrofitted to an existing structure or built during new home construction.



Underground tanks can be used under lawns in urban areas

Pic source www.polymaster.com.au



Tip

A filter is essential for any grey water system. It is designed to catch the lint, hair and other particles you don't want in your garden.

Grey water includes water from baths and showers



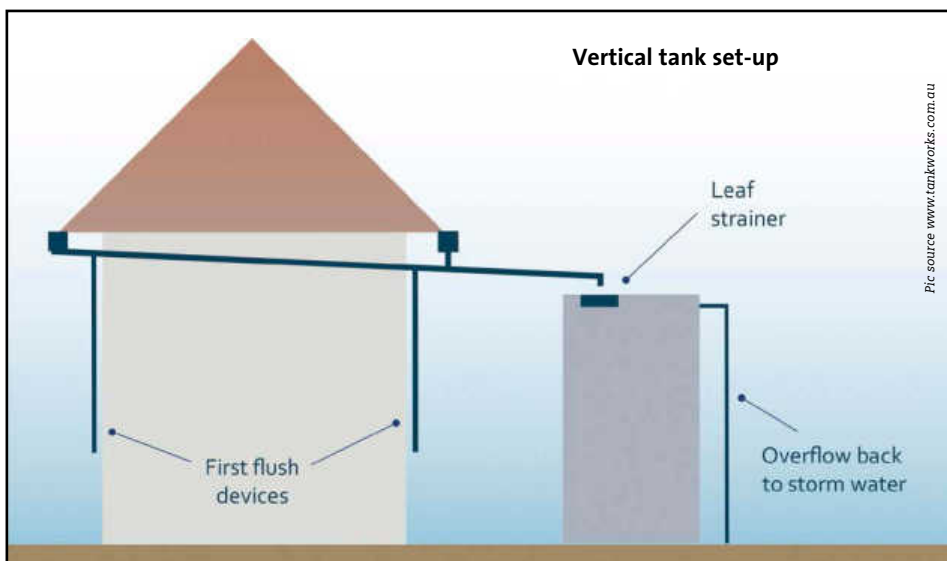
Basic 8-step installation guide for a vertical tank set-up

Follow these rainwater tank installation tips from JoJo Tanks:

- Step 1:** Choose where you want to place the tank.
- Step 2:** Level out and compact the ground where the tank will stand.
- Step 3:** Measure and lay the shuttering for the concrete slab.
- Step 4:** Lay the concrete, ensuring that the top of the slab is level.
- Step 5:** Place the tank in the middle of the slab.
- Step 6:** Extend a pipe from the gutter to the lid of the tank.
- Step 7:** Cut a hole in the lid of the tank. This is where the pipe from the gutter will fit.
- Step 8:** Connect the tank and overflow pipe.

Tank maintenance:

- Inspect the inside of the tank every three months to make sure that leaf litter has not built up on the bottom of your tank.
- Regularly check your rainwater pre-filtration device to ensure it is free from leaves and that rainwater can pass through.
- If you have a basket filter in the lid of your tank and a first flush diverter, clean it on a monthly basis.
- Ensure that there is a cover over the external mounted pressure pump (if you have this accessory on your tank).
- If there are any filters installed before



Tip

Grey water storage for longer than 24 hours is discouraged as it develops an offensive odour. There are advanced tanks that allow grey water to be stored for longer than 24 hours.

- or after your pressure pump and/or water tank, then ensure you clean or replace them as per your installer and manufacturer recommendations.
- Regularly clean rooftops used for harvesting to avoid runoff contamination.
- Ensure branches hanging over your roof are frequently trimmed back.
- Keep your gutter clean and free from leaves and debris.

Grey water harvesting

Grey water includes water from baths, showers, hand basins and washing machines. It is neither fresh nor black water. Water from the toilet, kitchen, and scullery sinks or dishwashers is considered black water and should be allowed to proceed to the sewer.

There are two main options for grey water use: direct diversion or installing a domestic grey water treatment system. Your option for a grey water system should depend on how much grey water your household produces, the size of your garden as well as your budget. Grey water should not be stored; however, if it is necessary to store grey water, then a water purification system is required to clean the water.

Advantages

- Grey water may contain small amounts of nitrogen and phosphorous, which are potential sources of plant nutrients.
- Harvesting grey water reduces water consumption as the harvested water is automatically used for various functions such as flushing a toilet. Doing this helps to save potable drinking water
- Grey water harvesting systems can be specifically tailored for your needs.
- The soapy nature of grey water can act as a pest repellent.

Disadvantages

- Chemicals in bleaches and fabric softeners can have detrimental effects on soil and plants.
- Hair from the bath and shower can cause pipe and pump blockage if it is not filtered.
- Retrofitting your home with a grey water system can be expensive and intrusive due to the need for dual plumbing to designated areas like toilets. It is more

Rand Water's rules for using grey water

Grey water can be used if:

- You use natural cleaning products or environmentally safe products where possible.
- You supplement your irrigation once a month with clean municipal water or rainwater.
- All your grey water originates from your own residence and is not allowed to leave the boundary on which it is generated.
- You apply the grey water in such a way that it is not allowed to form ponds on surfaces after watering.
- You never use irrigation systems that spray a fine mist.
- Your grey water system has an overflow or diversion directed into the sewage collection system.
- Your grey water system collection tank is covered to restrict access and to eliminate a habitat for mosquitoes or other vectors.



cost-effective if incorporated into a new construction or if a simple system is installed.

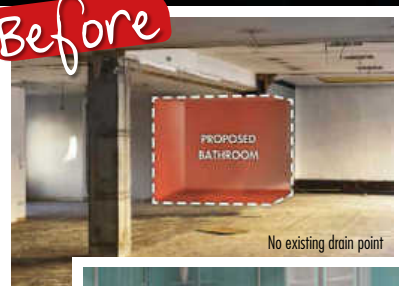
- Grey water systems are limited to a few uses. Grey water can pose health risks if used on food plants or for indoor use other than toilet flushing.
- If there is no landscape to irrigate, there may be no reason to install a grey water system. ✖

Sources: www.greenoverall.co.za,

www.jojotanks.co.za, www.waterwise.co.za

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Before



After



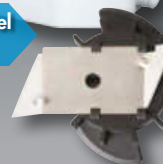
Discharge: 5 m vertically or 100 m horizontally (or combination of less)



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PLUMBING THE POSSIBILITIES

BRIGHT IDEAS

Readers share their time-saving, space-saving or innovative ideas



Industrial dome lights made pretty

We have a high central living space and wanted to fill some of the volume with two large pendant lamps. After doing some shopping around, we found that they were quite expensive. Instead of buying these, we were able to get hold of some second-hand industrial aluminium dome lamps left over from a shop makeover.

I started by removing the industrial lamp fittings and was left with a bare dome (see left photo above). After that, I sprayed the outside and inside with two different hammertone colours. I then bought smaller dome lamps and fitted these inside the larger domes. Finally, I got some trim used by panel beaters for automotive trim to create a nice soft edge to the dome. This was a very successful makeover and a lovely addition to our home.

Gerrit van den Dool, by email

WINNING LETTER

Moving heavy items

Ever been in a situation where you needed to move something heavy and it is only you and your wife? I have a solution to this problem that involves the use of golf balls and it may annoy some of our golfers.

Step-by-step guide

Step 1: Get a piece of hard board or any other wooden board and a few golf balls. The reason for using golf balls is that they have a plastic coating and do not damage tiles.

Step 2: Tilt the item you want to move to one side and place your wooden board underneath it.

Step 3: Place a few golf balls under the board and start to move the item.

Step 4: As soon as it's in motion, place additional balls underneath the board, so that the board slides on the golf balls.

Step 5: Once you have reached the place where you want the item, stop placing the balls under the board and one side of the board will tilt towards the floor.

Step 6: Tilt the item on the side closest the floor and remove the remaining balls as well as the board.

Step 7: All that you need to do now is make small adjustments to position the item exactly where you want it.



Sakkie Smuts, Rietkuil

Congratulations to Gerrit van den Dool who wins a FMC640LB Stanley Fatmax Impact Driver

WIN!

Share your ideas!

and stand in line to win a FME630K Stanley Fatmax 2mm Planer

Send your bright ideas to *The Home Handyman* 'Bright Ideas', PO Box 48 Cramerview, 2060 or email: editorial@homehandyman.co.za. Please include your phone number and physical address during office hours.



Red water diverters

Save water and electricity with a red water diverter valve



Did you know?

If you run water at your kitchen sink for one minute waiting for hot water to arrive, by using a red water diverter you could save approximately nine litres of water each time you wash the dishes.

When you switch on your hot water tap it often takes a minute or two for the water to run hot.

This delay is most evident when you are waiting for warm water to do the dishes or take a shower. The time it takes will depend on the distance between the geyser and the hot water tap and when the tap was used last. Most households will have only one geyser, which means that it will take some time for the cold water to be pushed out ...and this water often goes down the drain without being used.

This cool water (red water) can be saved by installing a red water diverter valve, which automatically diverts the cool water. The water can then be stored in a rainwater

tank or diverted to a location where it can be used immediately; like in the garden or to fill your pool.

More than one red water diverter can be installed in a home and the valve will deliver the best savings on taps used regularly or those with longer pipe runs. It can also be installed in a way that it services multiple fixtures, such as a shower and a basin, or for the shower only.



Red water diverter valve

The Redwater Diverter was invented in Australia and is patented in Australia, New Zealand, USA and South Africa. As the Redwater Diverter is new technology, there is not yet a South African standard to test it against. It does have Australian WaterMark approval, and, vitally, it is made from DZR brass that complies with SABS standards.

From the makers

Our own research has shown that an average household could save approximately 16 000 litres of water a year with a Redwater Diverter system. This figure was calculated using information compiled by the Brisbane City Council in April 2007. It estimated that the average household in Brisbane uses 470 litres per day. ✂

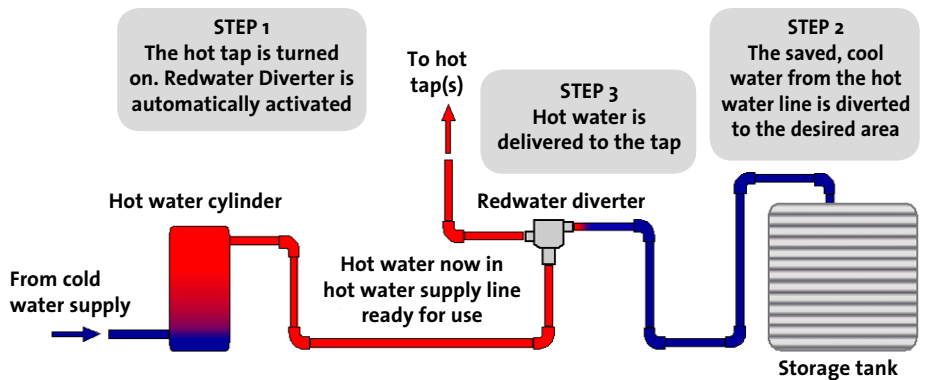
Information supplied by Watercon South Africa, www.watercon.co.za



Tip

To test how much you could save on a particular fixture, wait until the hot water pipes have cooled overnight, then use a bucket to catch the 'red water' at the hot tap in your kitchen and bathroom. When the hot water arrives, turn off the tap and measure how much water is in the bucket.

How the Redwater Diverter works



Project guide



Difficulty: Beginner



Estimated cost: Less than R200



Estimated time: ±2 hours

How to make a kitchen egg rack

An egg rack is a decorative and convenient way of storing eggs on the kitchen countertop. Clifford Roberts and woodworker Andries Eygelaar demonstrate how to make one



Many people store eggs in the fridge, but the temperature in most houses is cool enough to keep eggs on the kitchen counter, alongside the stove where it's convenient. So, instead of leaving them in the carton, we made this rack.

Egg racks are also a great gift that's easy and pocket-friendly to make. The egg rack can be made from Supawood, plywood or solid wood. The material will determine a finish of either paint or clear lacquer. The struts are shaped on the woodturning lathe and must therefore be solid wood.

Once you've become familiar with the construction method, you can easily adjust the design to allow for more levels, struts and eggs, and according to your preference of width or length. The egg rack in this example takes 12 eggs across two levels, each 130 x 210mm and separated by four struts of 125mm each. We used 9mm plywood and SA pine for the struts.



Tools & Materials

- Pencil and paper
- A drill and hole saw drill bits
- Lacquer or paint
- Wood glue
- Sandpaper
- Lathe and woodturning chisels
- Wood calipers

1

Plot each egg holder and use a hole saw drill to cut them out



Tip

If you're using thicker wood, mark your grid on both sides of the rack, drill halfway, then turn the rack over and finish drilling from the opposite side. This way you avoid splinters and tears on the surface.



2

Before fitting wood to your lathe, determine its centre position

Step-by-step guide

Step 1: To establish the location of the holes needed to house the eggs, start by drawing a middle line down the width of the plank. From either side, measure 35mm. These mark the centre of the first two holders; use a square to draw a horizontal line to cross each and create a grid. On either side of your marks, measure 60mm. With these dimensions you leave enough room for the struts at each corner. Now, make a mark at the midpoint between each corner and the outer rim of the nearest circle, and use an 8mm bit to drill the four holes.

Step 2: Use a 35mm hole saw drill bit and cut the six holes.

Step 3: To make the struts, you require four pieces of wood, each measuring 25 x 25mm. The final length will be 175mm, so start with about 230mm to be safe. These can be turned on your lathe to a design of your choice; remember that simplicity allows for better consistency. Once shaped, each strut must comprise a centre portion of 125mm that will be visible and an 8 x 25mm piece sticking out on each end. In the final assembly, these dowel extensions will pass through the corner holes of the rack and each take a wooden nub.

Step 4: You will need eight wooden nubs, four of which serve as the feet on which the rack stands and will therefore be flat underneath. Their width is the same as the



3

Create a guide of your design to transfer and ensure the struts are consistent

struts and the height in this case is also 25mm. Turn them on the lathe. Then use the 8mm bit and drill stand to drill 17mm into the centre of each nub so that it will fit over the exposed dowel of the strut. The nub must be flush with the rack when fitted correctly.

Step 5: Assemble the egg rack. The fit of each strut, dowel and nub should be snug and not forced into place. When each join is neat and tidy, glue them into place.

Step 6: To finish off the egg rack, give it at least three coats of paint, or lacquer if you want the wood grain visible. Allow each coat to dry properly before giving it a light sand and the next coat. ✂



4

Make sure your turning chisels are sharp



5

Smooth the wood with decreasing grades of sandpaper and then rub with sawdust



6

Use wood calipers to check your progress



7

Once all the components are completed, it's time to assemble the egg rack

Tips on turning

- As with all woodworking projects, keep your turning chisels sharp and turn up the light.
- Start your lathe at a slow speed until the edges are smooth, then speed up.
- Smooth the wood by starting with coarser sandpaper and work your way up.
- A handful of sawdust held against the turning wood will help to bring out the colour.
- Once you've shaped your first strut, remove and transfer the length of its curves onto a guide plank to ensure the consistency of the remaining struts.
- Use your wood calipers continuously to check the accuracy of your progress.
- A sheet of white paper behind the lathe helps the line stand out as you shape.

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Painting toolbox

Preparation is the most important step in achieving a successful finish, and many of the tools available for painting make preparation far easier.

By Gareth Greathead



Paint scraper

An indispensable tool when removing loose, bubbling or flaking paint from a surface before the application of a new coat of paint.



Window paint scraper

Has a sharp blade positioned in a way that makes it easy to remove flecks of paint from a window without scratching it.

Multi-tool or decorator's scraper

Essentially a paint scraper with a number of functional extras. On one side is usually a profiled edge ending in a point at the front. This enables you to get into tight spaces, corners or gaps where paint or loose material needs to be removed. It can also be used as a chisel to remove loose material from a surface being prepared. This may be the case when you find a small crack that needs to be chipped out.

On the opposite side of the scraper is a rounded profile that can be used as a squeegee to remove excess paint and later water from a roller being cleaned. Depending on the model you buy, you may also get a nail remover, integrated spanner cut-outs and even a bottle opener.



Putty knife

Used for removing and replacing putty in a window frame. Its point is rounded on the one side with a 45° angle on the other. It looks a bit like a fish knife and allows you to get into smaller spaces.



Sanding block

Is fitted with different grit sandpapers and makes the flattening of surfaces much easier and friendlier on your hands.



Wire brush

Also used to remove loose, flaking or bubbling paint.

Filling knife

More flexible than paint scrapers and makes it possible to fill cracks and level the crack filler with the surface more easily.



Tip

Use flexible fillers instead of hard and brittle fillers that tend to separate from the substrate after a short period.



Telescopic handle extension

Extends the reach of your handle when accessing high areas. Telescopic versions are more manageable than a broom and can be adjusted to the height required.



Brush cleaner

Polycell – a purpose-made, solvent-based cleaner for brushes and rollers. Despite it being a solvent, it may be used in conjunction with water, unlike thinners and mineral turpentine. The product can be applied directly to dirty brushes and washed off with water. Alternatively, if the bristles have been allowed to harden, brushes can be left to soak in the solvent and rinsed with water later. Polycell can also be diluted up to 50% with water and used to clean clothes and carpets, or degrease surfaces.



Sugar soap

A chemical cleaner ideal for the final cleaning of a wall before the application of paint. It is gentler than products like ammonia and it will increase the adhesion of paint to surfaces. ✖



Tip

Safety goggles and a dust mask or ventilator should be used but these are especially important when removing old paint that may contain lead. Overalls will help to protect your skin.

Throw sheet, drop cloth or builder's sheet

Protects floors, carpets, furniture or equipment and is designed to catch debris, dust and absorb paint spills, making cleaning easier.





Scroll saw technique

Woodworker Sue Mey shares her experience with scroll saws and pattern-making

By Gareth Greathead

Sue has always been interested in arts and crafts and has made all sorts of creative items for craft stores to sell, including wire art, tin, beading, tole painting, decoupage, ceramics, sewing crafts and wood. Sue says, "I became interested in scroll sawing when I saw a demonstration at a show and decided to try it. My first saw was a Delta and after cutting some stand-up puzzles I was thoroughly hooked."

Finding inspiration

Since then, Sue has made hundreds of pieces and drafted even more scroll saw patterns, some of which are freely available. She is also an avid photographer and loves animals, which is apparent in her scroll saw work. "I'm fortunate to be able to photograph my favourite subject, the leopard, and other wild animals in their natural habitat. This is especially useful when doing animal portraits."

"My inspiration comes from multiple sources and I seem to go through stages. I do a lot of Paint Shop Pro, and Photoshop drawing. After some practice, you start to look at every object as a potential scroll saw pattern. For example, the scrolls in a cast iron staircase that would be perfect in a Victorian picture frame..."

One of Sue's creations



The pattern process

For Sue the process often begins with rough drawings in a drawing app on her tablet. From there it is transferred to her PC. The image is imported into PSP, Photoshop, or Illustrator, and modified into a pattern as described below.

"Some patterns are drawn in Paint Shop Pro, combining preset shapes, picture fonts and text. For photographs I use mainly Photoshop. The most crucial tool in pattern-making is my Wacom tablet and pen, which allows me to draw details freehand. Obviously there are many tools

and actions you can use to make a pattern, but it can become quite time-consuming and complicated.”

Why the scroll saw?

“Female scrollers have expressed the opinion that they find it easy because of the correlation in working action between a scroll saw and a sewing machine. I think the scroll saw is safer than other woodworking tools and therefore less intimidating. At a woodworking show, more women are inclined to try a scroll saw than a router. However, in my experience, it normally doesn’t take long for the ladies to move on to tools like the table saw, disc/belt sander and router.

“Another reason may be that because scroll sawing demands a certain amount of finesse, patience and persistence, women generally do well with this form of woodworking.”

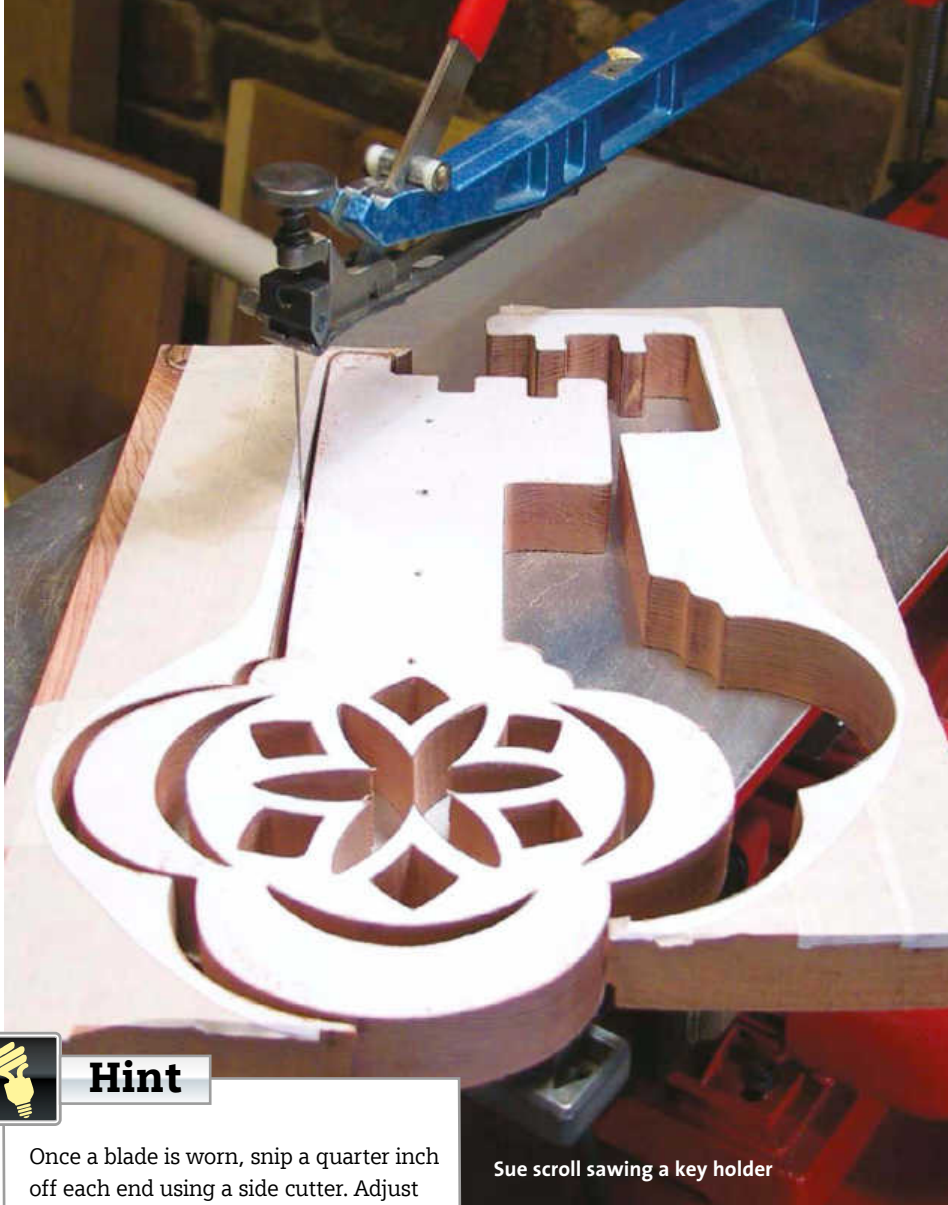
Getting started

“I no longer present scroll saw classes but I always used to tell my students to buy the best saw they can afford. I have seen so many prospective scrollers throw in the towel because they did not find it a pleasurable activity. In all cases, the reason for conceding defeat was an inferior, low-end scroll saw. You cannot enjoy using a saw that vibrates excessively or that will not hold a blade properly. The quality of the scroll saw is reflected in the end result of the project and people are often disappointed with their completed projects.”

Her other piece of advice is practice. Sue says that you shouldn’t be discouraged if the circles are not perfect or if you have a problem staying on the pattern lines; just keep at it and every project you undertake will be better than the previous one.

Scroll saws and blades

As with your first motor vehicle, the brand you buy normally has an influence on your



Hint

Once a blade is worn, snip a quarter inch off each end using a side cutter. Adjust the saw tension accordingly and reinsert the blade and there will be some brand new teeth on the blade!

future purchase decisions. Shortly after starting with scroll saw work, Sue bought herself a Hegner scroll saw and says she never looked back. “I enjoy my two Hegner saws tremendously, and it is the best brand available to us locally. My one Hegner saw has been running for over 23 years now and I have not had a moment’s trouble with it. The only maintenance required is lubricating the upper and lower arm bearings from time to time. It runs quietly, cuts smoothly and has an easy blade change system as well as the added ease of a quick blade clamp for making multiple inside cuts. However, if this brand is not inside the scope of your budget, there are several other mid-range brands offered.

Sue scroll sawing a key holder

“I import and use Flying Dutchman Scroll Saw Blades exclusively. My favourites are the FD-SR skip tooth reverse blades in all sizes and I also like the FD-HD no 2 heavy duty blades for cutting thick material.”

“The scroll sawing community is a wonderful group of people always willing to help. To get you started I have some free patterns available for download on my website. There are also Tips & Techniques pages, and helpful information in the “Useful Articles” link. To be kept updated on special offers or new patterns added to my site, click on the ‘Sign up for newsletter’ link on my home page, or email me.” ✂



For more information

Visit: www.scrollsawartist.com
Email: sue@scrollsawartist.com

Doll houses



Mike Brown shares his years of experience in making wooden dolls' houses with us

Dolls' houses hold a fascination for people of all ages, as do miniature items of all kinds. I have happy childhood memories of playing with the beautiful dolls' house of the girl next door. Many years later I finally had an excuse to make a dolls' house as a birthday present for my daughter. It wasn't easy to find the time to do this, because our own real-size house needed a lot of maintenance and the dolls' house had to be constructed in secret.

When I retired, and having improved some of my woodworking skills, I started making wooden dolls' house furniture, inspired by some of the collectable miniature furniture being made by local experts such as Brian Edwards and Koos 'Koekoe' Jonker, whose work is celebrated at the National Arts Festival held annually in Grahamstown.

My aim was to make less expensive and slightly sturdier houses and furniture children could actually play with.

Scale

Dolls' furniture comes in two major sizes: the miniaturists' 1/12 scale and a larger size for Barbie dolls. Dolls' houses are generally 1/12 scale, a scale chosen initially for the convenience of having 1 foot in real size become 1 inch in miniature. In the metric system, this now has to be interpreted as 300mm in real size becoming 25mm in miniature. Less common is a 1/16 scale.

Materials

My daughter's dolls' house was made mainly of Masonite-type hardboard. Since then, medium density fibreboard (MDF) has become available in a variety of thicknesses



This dolls' house is based on a Grahamstown settler cottage



Our daughter with her dolls' house



Mansion house

with 3-6mm being ideal for dolls' houses, and both surfaces take paint or stain superbly. The range of paints available has also increased and water-based acrylics are very convenient and more pleasant to work with. For the window glass I use plastic sheets that were available for transparencies for the now obsolete overhead projectors.

Tools

Most of the construction of a dolls' house can be done with basic woodworkers' tools, but there are some tools, particularly the miniature range, that can make preparation of small parts more convenient and safer. This includes multi-tools available in oscillating and rotational varieties.



Open-plan house front view



Moveable staircase and storeroom



Moveable entrance and balcony



Mansion house back view

These tools come with a large variety of accessories including scrapers, drills, buffing pads, cutting disks and many others that are suited for use with small and delicate pieces. Those that take making dolls' houses seriously can buy mini thicknesser planers, table saws and just about any tool commonly available in full size.

A jigsaw can be used for cutting out openings for doors and windows. I find using the jigsaw fixed upside down in a table gives far greater control and accuracy. Machining and profiling of floorboards, tiled floors, skirting boards and cornices requires a table-mounted route.

Step-by-step construction

Step 1: Like real houses, dolls' houses need a strong foundation. A sturdy wooden frame allows the exterior and interior walls to be glued and screwed in place and supports the lower floor (photo 1). In planning the frame, it is worth remembering that the completed house will be moved many times over many years, so minimising the weight of the structure while keeping it strong and making some provision for lifting it safely are desirable.



1 The basic foundations



2 Internal walls and cornices in place

Step 2: A view of the partially assembled house on the frame and positioning of what will become the cornice in the room below can be seen in photo 2. This profiled strip of wood has a flat edge facing upwards and the floor for the second storey will rest on this.

Step 3: Doors and windows are made to fit into frames and the complete, painted units are fitted into openings in the panels, with additional strips around door



3 Details of door construction

frames (photos 3 and 4). All my doors have a slightly rounded back edge and are pivoted on panel pins fitted into the frame. Windows have the plastic sandwiched between two identical frames. The opening sash windows, shown in the Georgian house (photo 5), need accurate cutting of slots in the frame.

Step 4: Dolls' houses need not involve woodturning, but staircases look better with some turned parts rather than plain dowels (Photo 6). A normal sized lathe can be used with small parts held in a Jacobs chuck. The staircase steps are made by sticking triangular blocks onto a ramp.

Step 5: The imitation brickwork seen on the Georgian house and the corner shop is time consuming, but the results are very satisfactory. The procedure is to use oil-based white undercoat for the first coat/s. When this white surface has completely dried, a topcoat of red acrylic paint is applied and allowed to dry. The brick pattern is then marked out using the edge of a flat screwdriver along a ruler to scrape away the topcoat, revealing the white



4 Details of window construction

underneath. This whole procedure is best done on the panels before assembly and touched up later.

Step 6: Roofs of corrugated iron can be simulated using corrugated cardboard used in packaging or available in colours from craft shops. Tiled roofs can be made from overlapping strips of cardboard, which form the layers of tiles, with each tile made by cutting partially into the strips. Before painting, I coat the tiles with extra wood glue to make sure that everything stays in place.



5 Opening sash windows

Step 7: The lights in my dolls' houses were made from Christmas tree lights, but the availability of all kinds of LEDs makes their use a far more reliable option. ✂

A selection of books on dolls' house construction:

- Brian Nickolls, *Making Character Dolls' Houses in 1/12 scale*, paperback ISBN 0 7153 0854 8, David & Charles, Newton Abbot, UK, 1991, 1999
- Venus & Martin Dodge, *The New Dolls' House Do-It-Yourself Book in 1/12 and 1/16 scale*, ISBN 0 7153 0616 2, David & Charles, Newton Abbot, UK, 1997
- Jean Nisbett, *The MODERN Dolls' House*, ISBN 1 86108 321 1, Guild of Master Craftsmen Publications, Lewes, UK, 2004
- Enid Bradshaw, *Dolls' Houses*, ISBN 0 7137 1913 3, Blandford Press, Poole, UK, 1986



6 Turned parts of a staircase

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6 tips to help you sell your home

Selling your property quickly in a downturned economy is likely to be one of the most challenging exercises you'll undertake. You may wait months or longer for the perfect buyer to come along and make the right offer on your home. You may even find that offers on your property are not in short supply, but finding buyers who actually qualify for the mortgage finance is an entirely different story.

But enough of the doom and gloom! As stressful as it may be, buying and selling a home should also be an exciting time. Even if the economy is looking a little subdued, there are ways to speed up the sale of your home and get that fair market-related price you're asking for without sacrificing your profit or sanity.

Before you pop up that 'for sale' sign, follow these tips from Hollard:

Hollard offers advice on how to get your home sold faster at the price you want

1. Get the pricing right

Getting your list price right is critical. Priced too low, you lose out financially, priced too high, you won't get the offers you need and your property will become stale on the market because prospects and agents may assume that there is a serious problem with it. If you choose to sell your property privately, research property sales in the area and, if necessary, get a professional valuator to assist you.

2. First impressions matter

It is important to consider what a prospective buyer will experience the first time they drive up to your home and walk through the front door.

Take a good look around your home:

- Is it clean and tidy?
- Is the garden well-tended and inviting?
- Does it look cared for?
- Does it smell fresh and pleasant?

Attention to detail and cleanliness draws people in and holds their interest for longer. Very few prospective buyers look at houses that need loads of work to make them liveable.

3. Tend to repairs

While we're not recommending you go on a major revamp of your home if you plan on selling it, tending to repairs and maintenance can make a world of difference. Fix that leaking tap, replace the cracked windows, paint the weathered doors and fix the faulty light fittings. Don't ignore necessary repairs that could be a red flag to a potential buyer. If they are



If you plan on selling your home, tending to repairs and maintenance can make a world of difference

interested, buyers will instantly look at ways of negotiating down on your price because of the perceived cost of the obvious repairs.

4. Sell with the promise of peace of mind

Many a seller has felt the pressure of the defects disclosure list and hoped that they have remembered everything. In some cases, you may know there is a problem, but never really fully investigated it.

A home warranty:

- Protects you and the buyer against the financial implications of serious defects, and in turn makes your house more attractive to qualified buyers.
- A warranty couples a professional property inspection to an insurance policy that protects the buyer and seller against the financial and legal ramifications of any defects that may emerge in the property for two years after taking transfer.

- It can mean a faster sale because any issues of mistrust between buyer and seller are removed.
- It can also mean getting a higher price for your property as you're less likely to be negotiated down; buyers place significant value on peace of mind.

Hollard's Home Warranty offers a professional report of any omitted or minor repairs that need attention on your property, as well as the cost to repair. With this you can choose to do the repairs and ensure maximum sale price, or sell as is. The benefit is that you won't end up overcompensating when negotiating for the cost of the repairs.

5. Declutter your home

Don't take it personally, but granny's radioactive green crochet blanket, the fluffy toys on the mantle and the stuffed wildebeest head hanging over the dining room table, whilst sentimental to you,

may not be everyone's cup of tea. Declutter your home as much as possible and pack away all the personal items, such as photographs, memorabilia, pet beds, stuffed animals, skins and so on. Ideally, you want to create a clean, blank canvas that potential buyers can visualise their own lives and likes in.

6. Take good photographs

You know the story – a picture speaks a thousand words. Once you have cleaned up, decluttered and done all the required repairs, get professional photographs done. More and more people shop online for homes these days, so you can make your property listing really appealing with professional photographs. ✨

Source:

For more information about the Hollard Home Warranty, visit: www.hollard.co.za or call 086-146-6348.

Project guide



Difficulty: Intermediate



Estimated cost: ±R150



Estimated time: 30 minutes

Put a spring in dad's step

Step stools have myriad uses around the home. Why not make one for your dad this Father's Day?

By Aarifah Nosarka

Step stools are nifty pieces of furniture. They can get you to hard-to-reach places in the kitchen, bathroom, bedroom, garage or workshop, they can offer easier access onto a high bed, or they can simply function as a stand for pot plants or your woodworking books. They can also be used to work the hips and legs.

Here's how to make one:



Tools

- Drill driver
- Random orbital sander
- Kreg jig
- Router



Materials

- Carpenter pencil
- Wood glue
- 38 x 50mm-long wood screws or pocket screws
- 2 x 75mm butt hinges



Cutting list

- [1] Stool sides – two 235mm x 19mm x 381mm
- [2] Stool rails - three 90mm x 19mm x 338mm
- [3] Stool top - one 235mm x 19mm x 400mm
- [4] Step sides - two 235mm x 19mm x 181mm
- [5] Step front rail - one 90mm x 19mm x 263mm
- [6] Step rear rail - one 69mm x 19mm x 263mm
- [7] Step tread - one 235mm x 19mm x 325mm

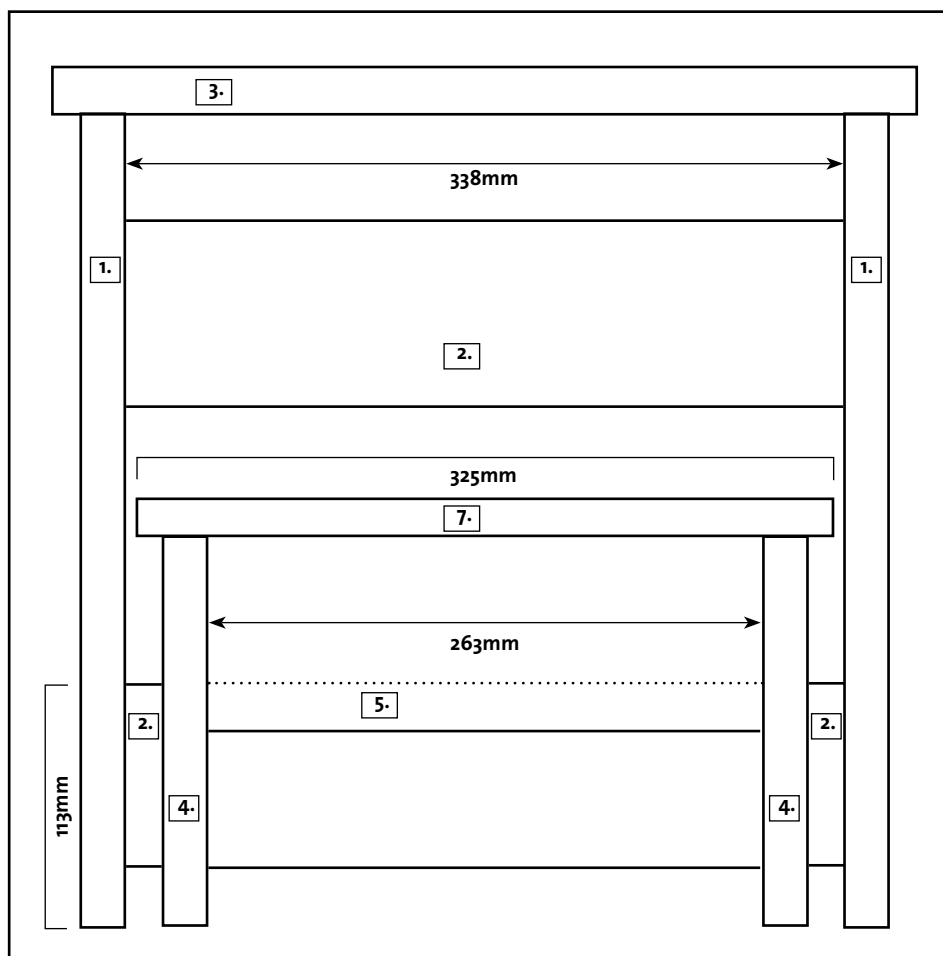


Figure A: Front view of the step stool

Pine was used to build this step stool. Decide on what type of wood would best suit your taste. You can choose from a variety of timber, be it hardwood or softwood. I've noticed quite a few step stools for purchase made from Baltic birch - a type of hardwood that is generally smooth, pale and lightweight. Pine is a lightweight softwood that is straight-grained and resistant to shrinking and swelling.

For the joinery, we used pocket holes. This is a technique I recently became acquainted with at the Vermont workshop in Midrand. I remember what a pocket hole is by recalling how it is created and the reason for its precision. My explanation is that a simple hole is drilled at an angle, forming a pocket for a screw. The pocket hole jig's design guides the drill bit through the wood at an angle, which produces an engineered hole where the screw rests.



The pre-cut pine was bundled and ready for assembly

The result is a tight joint that is as strong as a mortise-and-tenon joint, but takes much less time to assemble.

The step stool project was an idea introduced to *The Home Handyman* duo, myself and Candida, by Vermont's Greg De Villiers.

When we arrived at the workshop, Greg showed us a completed step stool, so we had an idea of what the outcome of our project would be. My first thought: "This looks like an intricate project to tackle, given that it consists of a foldable step." Of course, in Nelson Mandela's words, it always seems impossible until it's done. In the end, the project turned out to be fairly simple.

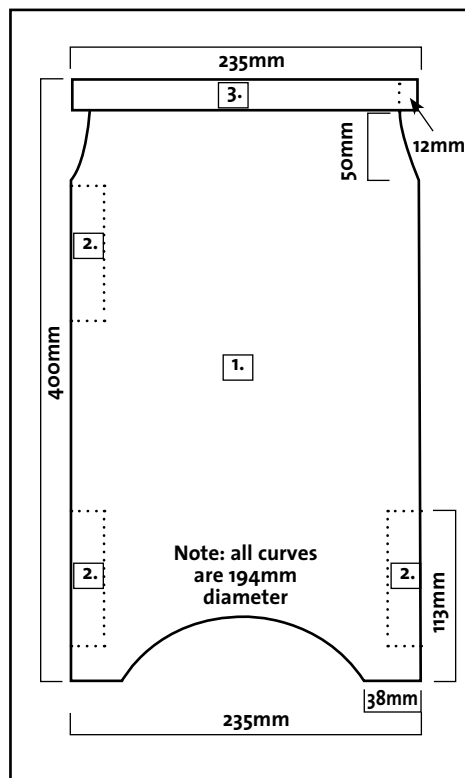


Figure B: Stool side view



A bread plate was used to mark the required cut-outs

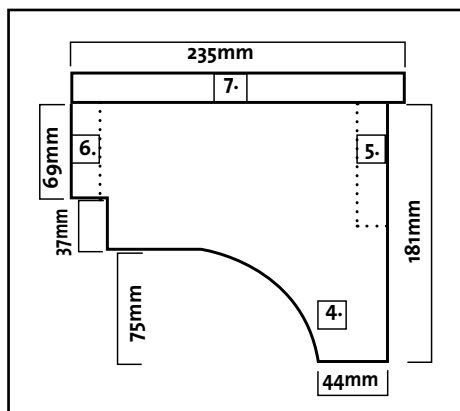


Figure C: Step side view



An orbital sander is being used to smooth the individual pieces before assembly

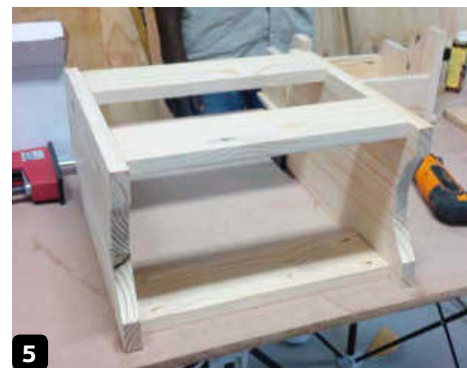


The first step in assembly is attaching the front support rails to the larger sides of what will be the top step

Step stool construction

Step 1: If you have not provided your cutting list to a timber merchant then this is the first step. I find it takes a load off having the wood pre-cut. It becomes a matter of joining the related timber parts as per instructions.

Step 2: Mark out curves in [1] and [4] as these pieces need to be cut and shaped.



Flip the stool over and fix the rear support rails to form a frame

You can use a bread plate to mark out curves just as picture 2 illustrates. Mark off positions of where the rails will be situated on the side pieces as well as the underside of the stool top, [3] and [7].

Step 3: Cut the curves marked off using a bread plate. This can be cut using your jigsaw. I still have difficulty keeping my hand steady when using a jigsaw. My attempts at sawing through curved cuts have always resulted in a cut way beyond the marked line. I currently consider the jigsaw my least favourite tool, though so many others find it user-friendly. This is a tool I need more practice on to hone my cutting skills.

Step 4: Use a router to clean up each of the cut-out corners; it does the job in a flash and minimises final sanding. If you do not have a router, this step can be bypassed by using a rasp to shape the curved cuts, followed by a quick sanding.

Step 5: Use an orbital sander to sand each of the wooden pieces so you have smoother, neater wooden units.

Step 6: Drill your pocket holes through each of the marked areas on your wooden pieces. You don't have to use pocket holes, long wood screws will suffice.

Step 7: To fix the stool sides to the front rail, start off by using wood glue at each end of the front rails before laying it on a flat surface. Place the two stool side pieces [1] on either side of the rail [2] and drill

your screws through the sides of the rail to secure the partly complete piece.

Step 8: Turn the unit over because you need to join the stool sides to the rear rails. Use wood glue on both ends of the rear rails and place them between the two stool side pieces. Secure it to the rails before screwing the side pieces to the rails.

Step 9: Your step stool is almost complete. To screw on the stool top, position the stool top [3] on top of the two stool side pieces [1] to ensure that you will be fixing the correct pieces accurately. Then apply glue to the top of the stool side pieces and place the stool top back onto the stool side pieces before drilling your screws through to better secure your unit.

Step 10: Grab your step front [5] and rear rails [6] and apply glue to the ends of each rail before positioning it between the two step side pieces, which is identified as [4]. Clamp together and drill your screws in, two on either side to complete the step frame.

Step 11: Glue the top of the step side pieces [4]. Place the tread [7] against the top of the two side pieces [4] and secure with screws.

Step 12: Your step stool is ready for hinges to be attached. Ensure that the hinges are 30mm in from each end before attaching them using a clamp, followed by securing



6
The assembled lower step will fit inside the main frame



7
The top step is finished off with the addition of a step on top



8
Hinges allow the lower step to fold into the top step to save space



9
Ensure that the hinges are 30mm in from each end



10
The completed step stool in the fold-away position

the hinges with screws to the bottom of the step rail [6].

Step 13: Make a mark to illustrate the middle section of the stool side pieces [1] before fixing the step to the stool. Once this is established, screw the loose ends of the hinges to the front stool rail [2].

This particular step stool does not need to be varnished, stained or painted. Should you wish to go a step further and have it blend in with its surrounds, there are various options for a perfect finish. You can varnish it, stain it or even create a distressed finish, which can be achieved by using chalk or milk paint. ✕



Angle grinders

An angle grinder is loud, throws sparks and debris, but it is also a versatile power tool and a major time saver

By Gareth Greathead

Today, angle grinders do a lot more than grind and cut. There is currently a massive selection of accessories that increase the usability of this tool, making it a worthwhile DIY purchase. Inexpensive grinders can be found, but, like all power tools, spending a little extra is worth it if you want the tool to last you a lifetime.

Applications

Metal

A hacksaw can be used to cut metal rods and tubes, but not half as quickly and effortlessly as a grinder. Further on that, a grinder can be used to cut away rusty bolt heads. It can also be used to sharpen lawnmower blades, spades and dull garden implements cheaply and easily.

Masonry

With the passing of time, and exposure to the elements, mortar in-between bricks can become soft or look aged. Removal and replacement of this mortar is a regular DIY task and requires a grinder. Angle grinders are commonly available in two sizes. The larger of the two can be used to chase channels in walls much more quickly and easily than a hammer and chisel. This comes in



handy when you accidentally drill into a water pipe and an immediate repair is preferable. The same is true when preparing walls for the extension of electrical networks inside the home.

Ceramic

DIY tile cutters normally only cut on a vertical or horizontal plane. More resourceful means are required when cutting tiles to make space around permanent fixtures like toilets or basins fixed into the floor or substrate.



Tip

When using a wire brush the direction in which you work will change depending on the orientation of the beam.



Note!

Preparation for plumbing and electrical extensions or repair can be done by the homeowner. However, an electrician or plumber is needed to complete installation of the hardware and commission the installation.

Wood

Grinders are not used to cut wood but, aggressive sanding disks, make light work of removing material or cleaning a surface. Wire brushes can also be used when working with wood; the right one will help you remove paint and others can be used to create special effects.

Features to look out for

Paying more for an angle grinder will extend the usability of the tool. A good grinder will have a spindle washer and spindle nut. These can be attached in different ways to accommodate a larger variety of accessories.

Look out for

- Adjustable blade guards.
- Quick stop mechanisms.
- The power rating of the motor.
- Rotational speed.
- Variable speed.
- Standard sizes.



Tip!

After fitting a new blade, manufacturers recommend running the grinder for a minute with no load. Should there be a failure, it is hoped it will happen then and not later when unexpected.

Blades

Pivotal to success and safety is use of the correct blades and, although many look the same, close attention to the labels is a must. Firstly, ensure that the wheel you intend using is designed to cut the material you intend to grind or cut. Make sure the maximum revolutions per minute (RPM) of the blade matches, or exceeds, the maximum rotational speed of your grinder. Make sure the size of the insert matches that of your grinder spindle and spindle washer.

Safety

Grinders can generate more than 10 000 RPM so the use of safety glasses and ear muffs is non-negotiable and, in many instances, so is a respirator or dust mask.



Grinder accessories

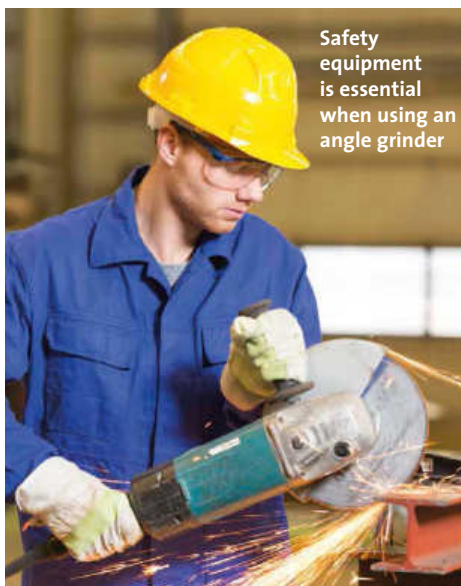
- Wire brushes.
- Sanding discs.
- Polishing wheels.
- Diamond-cutting wheels.
- Abrasive wheels.

Pivotal to safe use is awareness of the direction of rotation and how the accessory coming into contact with the item being worked on will react. All grinders have an 'arrow' indicating the direction of rotation, normally clockwise, but this can be confusing when working at different angles. Depending on what you are working on, ignorance of this consideration may lead to injury whether you are wearing safety equipment or not.



Tip!

When using a wire brush, the strands of wire must brush over the object and not hit into it. If it hits into it, this increases the potential of a strand dislodging and flying into your flesh.



Safety equipment is essential when using an angle grinder

Avoid cutting or grinding with the wheel spinning into your torso. This could leave you with a mouthful of plaster, burns or little pieces of material lodged in your clothing or worse.

While it may be possible to remove the blade guard from some grinders, it is not a good idea. This increases the possibility of material being flung at the user and, when a disk is spinning at such high speed, it can become dangerous. If a blade happens to 'explode', there is no doubt that the blade guard could save your eyes.

Caution should be at its highest when working with wire brushes as it can leave you with a strand of hot metal from a wire brush in your leg or face. ✖

Safety musts

- It is essential that you wear safety glasses, ear muffs and a dust mask.
- Wear protective clothing if necessary.
- Unplug the grinder before changing blades.
- Switch the grinder on before making contact with the workpiece.
- Attach and adjust the handle.
- Adjust the blade guard.
- Run wheels for one minute to ensure they are not defective.
- It is best to clamp the object being cut to avoid movement and subsequent binding of the disc.
- Avoid applying too much pressure and allow the blade to rest on the material and work its way through.

Benefits of a cordless grinder

- No cord to contend with.
- Slim while powerful.
- No electrical adaptors.
- Easier to handle.
- Less vibration.
- Ability to access the most inaccessible areas.



Bedside pedestals

part 1

Denis Lock provides a three-part series on how to make a classy cabinet using veneers

Part 1 covers the design and construction of the carcass or cabinet. Part 2 will cover the design and construction of the drawers and Part 3 will cover the choice and installation of drawer runners.

Nowadays, most of my woodworking time is spent teaching, writing and building jigs, accessories and gadgets (JAGs) for sale in my shop. I do, however, find some time to undertake cabinetmaking projects. It is just as well I do as my younger son's townhouse is not yet fully furnished. The current project for him is a pair of bedside pedestals to be followed by a padded headboard. Bevan has very definite ideas of what he wants. I was presented with a photograph taken in a hotel room somewhere and told that he wanted something like the pedestal shown in photo 1. "Straight lines, no curves and no mouldings."



My mandate

I don't like the unit in photo 1. The overlay drawers make it look like a piece of office furniture and the skinny top broadcasts to the world that it is a piece of mass-produced furniture made from 16mm veneered chipboard. Don't misunderstand me. I have nothing against the use of veneer; it is the mass-produced look where

everything is 16mm thick that I object to. The design we settled for is shown in the above photo. The sides and top of the units are a substantial 28mm thick and the three drawers are accurately fitted inset drawers with a consistent 2mm reveal. Other than the solid sapele mahogany kick strips, 30m of 6mm solid sapele mahogany edging and some internal (non-visible) pine framing and brackets, the carcasses and drawer fronts are made of MDF veneered with crown mahogany.

Two approaches can be taken. You can buy a pre-veneered board (2 750mm x 1 830mm), have it cut into the appropriate sized pieces and then apply a 6mm or so solid edging (to hide the ugly edges) as shown in photo 2. After trimming and varnishing, the edging is not that obvious. Photo 3 shows this treatment on another one of my projects. Mitring the corners of

the edging (photo 2) looks better than plain butt joints (photo 3). A second and superior approach is to start with a particle board or MDF substrate cut to the appropriate sizes and then edged with 6mm hardwood strips (photo 4). After trimming and sanding these, edged 'raw' boards are taken to a board upgrader (veneering company) for veneering. Photo 5 shows four of the drawer fronts, a carcass top and two carcass sides as they came back from the board upgrader. The only giveaway that these are not solid boards is that there is no end grain to be seen. I regard this as an advantage, end grain is generally not all that attractive.

I used two pieces of MDF, one 16mm and one 12mm, laminated together to give a 28mm substrate for the carcass pieces. The drawer fronts were made from 16mm MDF. Chipboard could have been used for the substrate to the veneer, but as I had a stock of 12mm and 16mm I used it. Chipboard would have been slightly cheaper and 20% less weight. Bedside pedestals are not moved around, so weight was not an issue. I took great care with the final sizing of these substrates or cores. When I say that the six drawer fronts were identical in size, I mean identical to within 0.1mm.

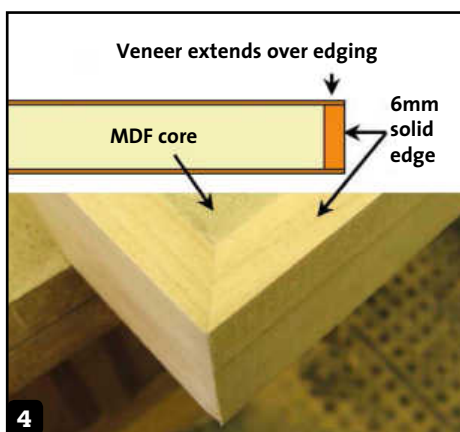
The edging strips were cut from a 22mm board of sapele mahogany. Photo 6 shows the strips prior to thickening to 6mm. I used my bandsaw to do this re-sawing. I prefer a bandsaw to a table saw for this task. The bandsaw set-up is shown in photo 7; a single-point fence to the left and a feather board to the right. The reason the strips are machined to 6mm is that this is the minimum setting on my thicknesser. Theoretically, I could go thinner if I used a sled, but I find that below 6mm there is the real risk of mahogany strips shattering under the thicknesser head. The accurate mitres seen in photo 4 were achieved by incremental sanding on the shop-made belt sander stand and table seen in photo 8. I have a lot of sash clamps, so I was able to clamp four edging strips at a time. I have been asked why I don't clamp two strips (opposite to each other) at a time.



2 Mitred edging applied to veneered material



3 Butt jointed edging



4 Veneering after edging



5 Components after veneering

Mitring the corners of the edging gives a better look than plain butt joints

My answer is that it is stressful enough getting one slippery strip aligned at a time. The strips are 2mm over width: 30mm x 6mm and 18mm x 6mm. They are attached with approximately 1mm overlap on each face of the MDF. This is then flush trimmed using a flush trim bit on my router table.

There is one thing left to do before visiting the board upgrader – prepare an unambiguous schedule (see veneering schedule table). It is particularly important to state the veneer species and the grain direction. The board upgrader passes your boards through a large drum sander to ensure that the edging is perfectly flush.



6 Thirty plus metres of edging



7

Bandsaw set to re-saw edging



8

Set-up to sand mitres



9

Clamping edging

The veneer is selected, roughly cut to size and laid out on the substrates. When it is necessary to use two or more leaves of veneer on the same wide surface, the leaves are aligned at the cut edge then joined using a veneer stitcher. Using different alignments, many visual effects can be attained. A special adhesive is applied with a roller, the veneer is positioned and then passed under a heated pressure roller, which cures the adhesive. The pieces of veneer are sequentially drawn from the same flitch and, as a result, superb colour and pattern matches are obtained. A flitch is defined as the complete bundle of thin sheets of veneer after cutting, laid together in sequence as they were sliced or sawn. The final photo does not do justice to the colour and grain pattern match on the six drawer fronts.

This design calls for accurate woodworking. The components that define the final sizes are the drawer fronts. These are 590mm long (578mm MDF plus two 6mm edges).



10

Back frames

The drawer reveal is 2mm, so the back frames shown in photo 10 must be 594mm wide. The first of these was made very accurately; not only in width, but they are also dead square. A piece of 9mm MDF was cut slightly oversize and temporarily screwed onto the first back frame. Using a flush trim router bit in my router table, the piece of MDF was trimmed to an exact match. I now had a pattern to trim a slightly oversize second back frame. The pattern was also used to position biscuit slots on the underside of the two carcass tops (photos 11 and 12). It was also used as a gauge to cut the front kick strip (photo 13) to the correct length.

Man-made boards do not lend themselves to traditional joinery techniques (such as dovetails) and I decided to use biscuit joinery (photos 12 and 13). This is exactly what Herman Steiner had in mind when he invented the humble wooden biscuit in 1955; solving problems in joining man-made panels. Photo 14 details the joints used in



11

Common template



12

Biscuit slots in underside of top

the carcass. The top is joined to the sides with five biscuits each side (A). The sides are joined to the back frame by three biscuits and four screws each side (B). The pieces of the back frame are joined by six biscuits per frame (C). The kick strip is joined to the carcass side by two biscuits each side. The bracket and screws (photos 13 and inset to photo 14) were added to this joint as an afterthought and do not feature in photos 14 and 15, which were taken earlier. That is

Veneering schedule

Description	No.	Length	Width	M2
Top	2	650	500	0.65
Sides	4	522	494	1.03
Drawer faces	6	578	153	0.53
Total	12			2.21

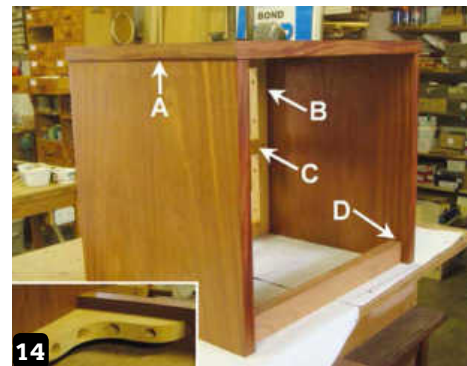
Sand and veneer both faces with crown mahogany.
Total 4.42 square metres.
Grain to run with length (largest dimension) in all cases.

a total of 20 biscuits per cabinet. Photo 15 shows a back view of the cabinets. A 3mm MDF dust panel will cover the pine frames. This panel could most simply be added with a few dabs of glue. I will use 3mm x 12mm screws. In general, I don't like a permanently attached back on a unit with drawers. Who knows whether you may have to adjust or replace a runner one day.

Next month I will tell you how I made the drawers. I will focus on the tricks I used to get the drawers to be an exact fit. An important part of this is the assembly jig that guaranteed drawers were dead square. The following month I will focus on hanging the drawers. Yes, like doors, drawers are also hung. I will discuss my choice of drawer runner and explain the simple gauges I used to ensure spot on placement. I can honestly state that each of the six drawers fitted perfectly first time. I did not adjust a single screw. ✖



13 Brackets and biscuits



14 Joinery details



15 A view from the back



Contact

Denis Lock runs a router school and shop in Bedfordview, Gauteng. He can be contacted at denis.lock@worldonline.co.za or 082-267-5948. Visit his website at www.routingwithdenis.co.za

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The Woodworker's Corner is a woodworking showcase



Adirondack chair

I just downloaded my April issue of *The Home Handyman* and while browsing through the magazine, I, as we say in Afrikaans, “*het my melk weg geskrik*” when I saw my name in it. I am a ‘newbie’ and this prize is very welcome.

I have included some photographs illustrating how the chairs turned out. I stained one light and the other dark to compare what would be the most appealing. They are just heavy enough so that the grandkids cannot pull them around, but not too heavy to move. One thing I did not take into account was the bottom of the legs, which splinter when pulled along the ground. A thin strip of plastic nailed to the bottom of the legs solved that problem (after moaning at my wife for pulling and not lifting the chairs).

Raymond Redelinghuys, by email

*Please send us pictures of your projects.
Write a caption with your name, inspiration, type of wood, etc. and
send it to editorial@homehandyman.co.za*

Furniture upcycling

This is the second project that Tamryn and Johann Massyn have shared and it looks like they are achieving their goal of one project per month.

A family friend gave us her old writer's table, which she tried to restore by taking it to someone, but they didn't do a good job at all and it didn't fit in with her other furniture. We decided to sand the varnish coating away and replace it with a rustic whitewash finish. It looks amazing and we are so happy with the outcome – now to whitewash the rest of the furniture...

Tamryn Massyn, by email



Before



After



Woodworking associations

Woodworking associations' details are available on our website at www.homehandyman.co.za

BOOKSHELF

General manager at Hardware Centre Marius Ackerman reviews the latest in woodworking literature

Building Kitchen Cabinets

Author: Udo Schmidt

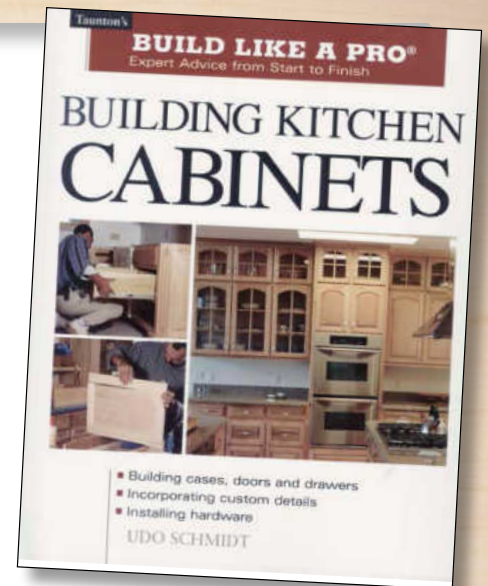
Publisher: The Taunton Press

When you decide to build your own kitchen cabinets, you are not only saving money, but you could improve on the standard off-the-shelf cabinet that you will purchase. You can use better quality material and manufacture the cabinet to the perfect size. In this publication, author Udo Schmidt demonstrates and explains techniques that will allow you to incorporate custom design details on your cabinets, which will make them even more unique and distinctive. Arched doors, custom cornice treatments, oversize pantry cabinets and solid wood end panels are just a few of the customisations that you can consider.

This 163-page soft cover publication will teach you to:

- Design custom cabinetry to suit your available space and budget.
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- Install Euro-style concealed hinges and drawer slides.
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For more information, contact Hardware Centre
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Throwback Thursdays on Facebook

On our Facebook page we have been featuring old tools from readers. Here are some tools recently featured.

Like our Facebook page: The Home Handyman Magazine and upload pics of your old tools.



◀ In February my mother gave me something I had wanted for years. It is a hand router dating back to World War 2.
Henry Massyn



▶ This hand planer and hand drill belonged to my father, so they are estimated to be more than 50 years old.
Lukas Otto



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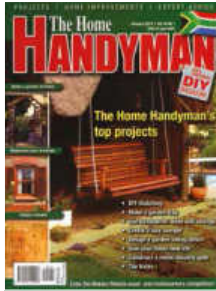
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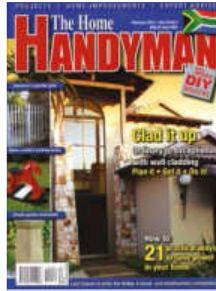
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- Install a shower

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- Construct a garden gate
- Make a child's rocking horse

MARCH 2012



- Redesign a bathroom
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APRIL 2012



- Protect and secure your home
- Construct a flower stand
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MAY 2012



- Repair problem plaster
- Install an outdoor light
- Make a wine rack

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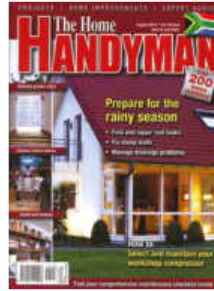
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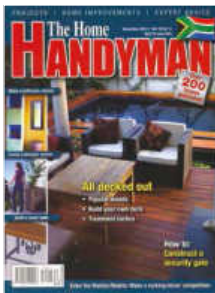
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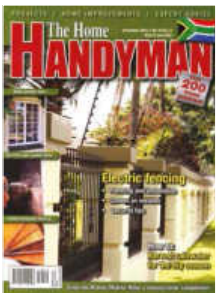
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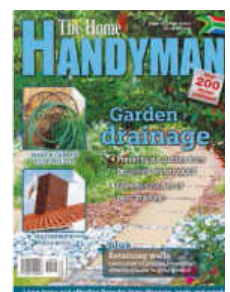
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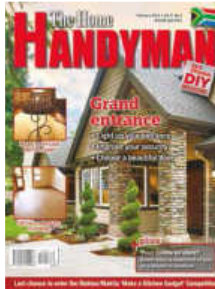
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Let's get social

DIY has a social media side as well. Here are some of the tweets that graced the @HomeHandymanmag Twitter page this past month



@Essential Hardware

Some great tips to get you through that paint project.
#HomeHacks <http://fb.me/3uQrGtB3X>



@simplystairs



Tip!

Scarf joint: shade areas to be removed to create housings, remembering to add an allowance for folding wedges



@NHBC

The Home Building Manual provides a comprehensive outline of quality requirements for builders and home inspectors
#HBMWorkshop



@Family_Handyman

The ultimate solution for a hopeless slab - How to build a deck over a concrete patio <http://spr.ly/6017B5FCL>



@MyFixitUpLife

You can make a DIY modern mantel. Here's how! <http://ow.ly/2bwSzQ>
<http://ow.ly/i/hzfRF>



@ToolGuyd

From the forum: Unique DIY tool storage solutions
<http://toolguyd.com/diy-tool-storage-solutions>

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Facebook page of the month

This month's Facebook page of the month is Makita Power Tools SA, with more than 7 000 page likes. The page boasts tool related news, updates on the latest products available, frequent competitions, accessory catalogues and a desktop calendar that can be downloaded each month. Makita was founded by Mr Mosaburo Makita in 1915 and first operated as an electric motors repairing company. In 1958, Makita introduced its first electric power tool, the 1000 model planer, the first electric planer ever made. From 1960, Makita discontinued motor manufacturing and focused entirely on power tools.



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At the polls

The results are in for the below poll:

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Pocket watch 'bargain'

Reuben the Screwman's confidence in picking up bargains results in a bad buy

Back in the '80s, when men in safari suits were all the rage, I worked for a man who later became my business partner. Max was an eccentric person who spent most of his time living in the past. He had a passion for antiques and specialised in pocket watches.

There were no counter offers from the bunch of losers around me, other than stares of disbelief – if only they knew!

With the big financial crash of the time in full swing, I launched a tool division and spent a lot of time frequenting auctions selling items from insolvent hardware stores. I became quite proficient at spotting a bargain and it was this false sense of confidence that led to one of my all-time great embarrassments.

There was an auction of a deceased estate in Randburg. The deceased was the owner of a hardware store and the goods on auction included personal items as well as tools. The auctioneer placed the goods in piles to be auctioned off in what are called job lots. A job lot caught my eye; it contained a few tools of no real commercial value, but amongst them was a box of old pocket watches. All off a sudden, the auction took on a whole new spin. I was now in the antique business with thought given to Max and his love for pocket watches.

I very deviously placed some of the cheap tools on top of the pile to hide the real treasure – the pocket watches. Eventually, lot number 67 (I remember the lot number to this day) was open to bids. I was not going to take any chances and opened the bid with a ridiculous amount of money. There were no counter offers from the bunch of losers around me, other than stares of disbelief – if only they knew!

I didn't stay for the rest of the auction, I had to get back and give Max the surprise of his life and a possible salary increase for me. I was in such a rush to get back with my treasure that I picked up a speeding fine in the process – a small price to pay, I thought.

Back at the shop I dumped the useless pile of rubbish I had bought in the store, sealed the box of 'antique pocket watches' and set off to Max's office with his surprise. I could hardly contain myself as he opened the box. His enthusiasm didn't match mine. To my surprise, he asked me what was in the box, "Ha, ha, you joker; pocket watches", I said. "What did you pay for it?" he asked.

I told him of my cunning plan and what I'd paid for it. There was a moment of silence, in fact, an eternity of silence. "These are broken stopwatches, probably from a sports club, Reub," was the devastating reply. It was a day of silence and avoidance.

The so-called surprise became an in-house joke between us until the day he died a few years ago. ✖

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